VSB – TECHNICAL UNIVERSITY OF OSTRAVA

FACULTY OF ECONOMICS

DEPARTMENT OF FINANCE

Zpracování finanční analýzy vybrané společnosti v kosmetickém průmyslu
Working out Financial Analysis of a Selected Company in Cosmetic Industry

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Ostrava 2020

VŠB - Technical University of Ostrava
Faculty of Economics
Department of Finance

Bachelor Thesis Assignment

Student: **Jie Lang**

Study Programme: B6202 Economic Policy and Administration

Study Branch: 6202R010 Finance

Title: Working out Financial Analysis of a Selected Company in Cosmetic Industry
Zpracování finanční analýzy vybrané společnosti v kosmetickém průmyslu

The thesis language: English

Description:

1. Introduction
2. Description of the Financial Analysis
3. Profile of a Selected Company
4. Processing Financial Analysis of a Selected Company
5. Conclusion

Bibliography
List of Abbreviations
Declaration of Utilisation of Results from the Bachelor Thesis
List of Annexes
Annexes

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Extent and terms of a thesis are specified in directions for its elaboration that are opened to the public on the web sites of the faculty.

Supervisor: **Ing. Kateřina Stanovská, Ph.D.**

Date of issue: 22.11.2019

Date of submission: 07.05.2020

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VSB/19/050319/9900 from 24.9.2019

I hereby declare that I have elaborated the entire thesis including annexes myself.
[I have supplemented the provided annexes No.1 and No.2 by myself.]

Ostrava dated 5.6. 2020 .

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1. Introduction

This bachelor thesis mainly introduces the financial situation of L'Oréal Group. Founded in 1909, L'Oréal Group is the world's largest cosmetics company and one of the Fortune Global 500 companies. As a leader in the cosmetics industry, L'Oréal Group has 42 brand products, divided into four categories: professional products, counter brands, active cosmetics and popular products.

The analysis of financial statements plays an important role in the development of the company. It uses different data for comparative analysis to capture effective information. Corporate management sees it as an important tool for evaluating corporate business and financial management. Investors use it to judge whether the company can create value. Creditors use it to analyze the company's ability to repay debt on time and asset liquidity.

The aim of bachelor thesis is provided financial analysis for L'Oréal Group to evaluate the financial situation of L'Oréal Group and understand the status and development prospects of L'Oréal Group.

The thesis is divided into five parts. The first chapter is an introduction and last chapter is conclusion. The second chapter is the description of financial analysis. The third chapter is the introduction of L'Oréal Group. The fourth chapter deals with the financial analysis of L'Oréal Group.

Chapter one will introduce the main purpose of the paper, and briefly introduces each chapter.

Chapter two will introduce the theoretical knowledge of financial analysis. Firstly, we will describe two financial statements, which are the balance sheet and the income statement. Financial statements are the data source and basis for financial analysis. Then, we will introduce common-size analysis methods, including horizontal common-size analysis and vertical common-size analysis. Finally, we will introduce the financial ratio analysis in detail, namely profitability ratios, liquidity ratios, solvency ratios, asset management ratios and pyramid decomposition. The financial ratio analysis method will be applied in Chapter four.

Chapter three will introduce the basic situation and short information of L'Oréal Group. Introduced from four aspects: development history, group operation structure, group main products and core strategy.

Chapter four will use the formula of Chapter 2 to analyze the financial situation of L'Oréal Group in detail. Firstly, we apply the common-size analysis of the L'Oréal Group, based on the financial data in the 2013-2018 annual report, calculating the absolute and relative changes in the data. Next, we will calculate four basic financial ratios and analyze the financial and operating conditions of the L'Oréal Group in detail. Finally, we will use the pyramid decomposition to analyze the financial ratio and use the method of influence quantification to calculate the net profit margin, asset turnover and financial leverage. This part is the most important part of the whole paper.

2. Description of the Financial Analysis

In this chapter, we will introduce the theoretical knowledge of financial analysis. Firstly, we will introduce the financial statements, which are the balance sheet and the income statement. The data in the financial statements is the basis for financial analysis. Next, we will elaborate on common-size analysis, including horizontal common-size analysis and vertical common-size analysis. The last part is the financial ratio analysis, including profitability ratio, liquidity ratio, solvency ratio, asset management ratio and pyramid decomposition.

Financial analysis is conducive to enterprise managers to assess the current status of the enterprise, by monitoring the use of enterprise funds, analysis of enterprise financial returns and risks, to provide financial information support for enterprise development.

Main sources of this chapter are from Thomas R. Ittelson, 2009, and FRIDSON, Martin S. and Fernando ALVAREZ, 2011.

2.1 Financial Statements Analysis

The financial statements are prepared in accordance with accounting standards. They are written to the owner, creditors, the government, other parties, and the general public to comprehensively reflect the financial status of the accounting entity on a specific date and the operating results and cash flow status of a specific period.

The financial statements including balance sheet, income statement, cash flow statement, statement of changes in owner's equity and notes to financial statements. The following sections focus on the content, format, structure, and importance of balance sheet and income statement.

2.1.1 Balance Sheet

The balance sheet is one of the two main financial statements of a business, the other is the income statement. It summarizes the enterprise's assets, the value of those assets, and the financing portfolio used to finance these assets at a specific point in time. Because it summarizes a business’s finances, the balance sheet is also sometimes called the

statement of financial position.

Some describe the balance sheet as a "snapshot" of the enterprise's financial position at a point in time. Companies usually prepare one at the end of a reporting period, such as a month, quarter, or year. For example, the amounts reported on a balance sheet on February 29, 2020 reflect that instant of all the transactions recorded until February 29.

It is used to reflect other important financial statements and for fundamental analysis or calculation of financial ratios. The basic formula used on the balance sheet is:

$$Assets = Liabilities + Shareholders' Equity \quad (2.1)$$

We will explain the formula with its major components, elements or major categories. The balance sheet can be divided into two parts. They are assets, liabilities and stockholders' equity.

Assets are things that the enterprise owns and arise from purchase which are investing activities, business activities which are operating activities or financing activities. They are the resources of the enterprise that have been acquired through transactions and have future economic value that can be measured and expressed in dollars. Assets also include costs paid in advance that have not yet expired, such as prepaid advertising, prepaid insurance, and prepaid rent.

Assets can be classified into two categories, which are fixed assets and current assets. Fixed assets mean long-term assets or non-current assets. Fixed assets are relatively long life and low liquidity. Long-term assets are used by an enterprise over a period longer than one year. Their categorization includes tangible assets such as equipment, land, and building and intangible assets such as trademark, patents, goodwill, etc. Fixed assets also include financial investments, which is investments in securities and assets of other firms such as shares, bonds, etc.

Current assets mean short-term assets, including inventories, accounts receivables, goods, cash and cash equivalents, other short-term assets. They have short life and high liquidity, which means in the form of cash or can be relatively quickly converted into cash. Most can be converted into cash value within the next year.

Liabilities are obligations of the enterprise, such as money that the corporation owes to lenders, suppliers, employees, etc. Liabilities are categorized by whom the debt is owed to and whether the debt is payable within the year (current liabilities) or is a long-term obligation.

Liabilities are divided into two categories: current liabilities and non-current liabilities. Current liabilities are bills that must be paid within one year. Current liabilities are classified depending on whom the debt is owed to. Accounts payable owed to suppliers, accrued expenses owed to employees and other for services. Current debt owed to lenders and taxes owed to the government. Non-current liabilities mean long-term liabilities, including loans with a repayment period of one year or more, such as a mortgage on a building.

Shareholders' equity is a very special kind of liability. It represents the value of the corporation that belongs to its owners. However, this "debt" will never be repaid in the normal course of business. Shareholders' equity has two components, capital stock and retained earnings. Capital stock is the original amount of money the owners contributed as their investment in the stock of the enterprise. Capital stock can be divided into common stock and preferred stock. All companies issue common stock and often issue preferred stock that have contractual rights over the common stock. The rights include a specified dividend. Retained earnings are all the earnings of the enterprise that have been retained, that is, not paid out as dividends to the owners. It equals sum of all profits minus sum of all dividends and can be regarded as a source of money from future dividends could be paid. If the enterprise has not made a profit but sustained losses, it has accumulated deficit.

Table 2-1 The Balance Sheet Format

ASSETS	***LIABILITIES & EQUITY***
Cash	Accounts Payable
Accounts Receivable	Accrued Expenses
Inventory	Current Portion of Debt
Prepaid Expenses	Income Taxes Payable
Current Assets	**Current Liabilities**
Other Assets	**Long-term Debt**
Fixed Assets at Cost	Capital Stock
Accumulated Depreciation	Retained Earnings
Net Fixed Assets	**Shareholder's Equity**
TOTAL ASSETS	**TOTAL LIABILITIES & EQUITY**

Source: Thomas R. Ittelson, 2009, p.22, A Step-by-Step Guide to Understanding and Creating Financial Reports

2.1.2 Income Statement

The income statement is one of the main financial statements used by accountants and business owners. The income statement is also known as the profit and loss statement (P & L) and operating statements.

The income statement focuses on business activities and fundraising activities and provides information on the financial results of the enterprise's business activities over a period of time, namely revenue, expenses, net income and earnings per share (usually one year or a quarter of a year).

The income statement is important because when using the accrual basis of accounting, it shows the enterprise's profitability during the interval specified in its title. The basic equation of the income statement is:

$$Revenues - Costs(Expenses) = Net\ Income(loss) \qquad (2.2)$$

Revenue is often referred to as operating income. The retailer's main activity is buying and selling goods. The main activity of a manufacturer is to produce products and sell them. For retailers, manufacturers, wholesalers, and distributors, the revenue generated

by their main activity is called sales revenue or sales. When the enterprise ships to customers, sales are recorded in the income statement. Customers are now obliged to pay for the product, and the enterprise has the right to collect.

It is important not to confuse revenues with receipts. Based on accrual accounting, service income and sales income are shown at the top of the income statement during the earning or delivery period, not during the cash collection period. Simply put, income happens when you make money, and income happens when you receive cash.

For example, if a retailer pays a customer for 30 days, revenue occurs when the item is sold (and reported) to the buyer, rather than when cash is received after 30 days. If the item is sold in December, the sales report is on the December income statement. When a retailer receives a check for December sales in January, the retailer has a January receipt, not January revenue.

Gross profit margin is the amount remaining from sales after deducting product manufacturing (cost of goods sold). The gross profit margin is at some point called gross profit or the enterprise's manufacturing profit.

Next, deduct operating costs to determine operating profit (income from operations). Operating costs typically include sales and marketing expenses, general and administrative expenses, and depreciation. Operating profit reflects the enterprise's deduction of interest, other debt expenses, and business activities before taxes from its usual business activities.

Companies can also generate income and expenses from financial (non-operational) activities. For example, a manufacturing enterprise sells a property for profit. Paying loan interest is a non-operational expense. Similarly, interest charged on cash balances in a enterprise's bank account is non-operating income.

Since interest income (or expenses) comes from non-operating sources, it is reported on the Income Statement, which is slightly lower than the operating income line. Similarly, taxes.

Table 2-2 Income Statement Format

Net Sales	a	Revenues
Cost of Goods Sold	b	
Gross Margin	a-b=c	
Sales & Marketing	d	
Research & Development	e	
General & Administrative	f	
Operating Expenses	d+e+f=g	
Income from Operations	c-g=h	Operating profit: EBIT
Interest Income	I	Financial revenues - Financial costs
Income Taxes	J	
Net Income	h+i-j=k	EAT

Source: Thomas R. Ittelson, 2009, p.51, A Step-by-Step Guide to Understanding and Creating Financial Reports

2.2 Common-size Analysis

Common-size analysis is a financial statement analysis method that converts each financial statement data into an easy-to-compare universal size, an amount measured as a percentage. Using a common-size financial report can help investors discover the potential benefits of the original financial statements for easier analyze companies and compare them with their peers. Basically, common-size analysis creates a ratio between each financial statement item and the base item. The most used base is the total assets or income, which is achieved by using the income statement items as a percentage of net sales and the balance sheet items as a percentage of total assets. The purpose is to identify trends and major differences, including the horizontal common-size analysis and the vertical common-size analysis, which reflects the proportional relationship between related items in the same statement, and shows the relative importance of each purpose.

The common-size analysis presents each item as a percentage of the statement's largest item. Both the Balance Sheet and the Income Statement can be converted into "common size" statements for analysis. For example, to convert the Balance Sheet into a common-size analysis, all components are expressed as a percentage of total assets. Normally, the largest item in the Income Statement is revenues. Thus, when the Income Statement is

converted into a common-size statement, all items are presented as a percentage of revenues.

We always divide common-size analysis into horizontal conformal analysis methods and vertical conformal analysis methods.

2.2.1 Horizontal Common-size Analysis

Horizontal common-size analysis, also known as trend analysis, can refer to an analysis that compares specific financial statement items and their values with previous or future time periods. Comparing historical data from multiple accounting periods, such as financial ratios, benchmarks, or line items. It can also refer to the comparison of an enterprise with other enterprises at the same point in time, analyzing the evolution of the data in the financial statements over a certain period.

Horizontal common size is based on the absolute or percentage calculation of the increase or decrease of each project and the previous period. In the target enterprise valuation, enterprise mergers and acquisitions, financial crisis forecasting, and other fields, investors or analysts usually use this method to assess the relative changes in different projects. To understand the factors that have driven growth in corporate financial performance over the years and identify growth patterns or compare the growth rates and profitability of different companies. We calculate the horizontal common-size analysis by the following formula:

$$\Delta I_t\% = \frac{I_t - I_{t-1}}{I_{t-1}} \cdot 100, \tag{2.3}$$

Where I_t is amount of the items in comparison year and I_{t-1} is the amount of items in base year.

In the case of horizontal analysis, the quality of the financial statement data information changes over time, so it is necessary to consider possible changes in specific economic conditions, such as changes in taxation and changes in the capital market.

2.2.2 Vertical Common-size Analysis

Vertical common-size analysis is an analysis method that uses proportions throughout the

financial statements to analyze the composition of assets, equity, and liabilities in each financial statement during the same investigation period. And to analyze the composition of the statement items and the totality of each item proportion, which calculates the proportion of the whole and part of the relevant data in the financial report. For example, changes in the selected benchmark ratio such as total revenue, total assets or total liabilities, expressed as a percentage of a given item or base, means the ratio of line terms to a term.

Therefore, income statement items can be expressed as a percentage of total assets, while balance sheet items can be expressed as a percentage of total assets or liabilities. For example, in the balance sheet, current assets and long-term assets have different percentages of total assets. We calculate the vertical common-size analysis by the following formula:

$$Percentage\ of\ base = \frac{I_i}{I_b} \cdot 100 \tag{2.4}$$

Where I_i is amount of individual item and I_b is amount of base.

The vertical common-size analysis helps predict future trends and is useful in management performance evaluation. It can compare quarterly and annual data over a few years, making it easy to identify good or bad performance indicators. It can see the relative ratio of account balances, so it is easy to compare the financial statements of two different companies.

2.3 Financial Ratio Analysis

It is not the absolute quantities of sales, costs, expenses, and assets that determine financial position of an enterprise, but the relationship between them. Financial ratio analysis is most useful when analysts want to compare annual performance to determine if the situations are getting better or getting worse for the enterprise or compare companies in an industry to see which companies perform best under common constraints.

Financial ratio analysis according to the quantitative analysis between financial data, calculate the proportion of relevant indicators in the financial statements, which is used to evaluate the enterprise's performance and financial status.

By analyzing enterprise’s statements and common ration indicators such as profitability, liquidity, solvency (leverage), and asset management (activity), analysts can understand the enterprise's financial performance and use it to evaluate all aspects of the enterprise's operations. Compare the enterprise's financial position with industry averages or with other companies operating in the industry. It is good for companies to prepare capital, because some companies need more capital, and some need less capital.

Analysts can also compare the ratios of different industries, understand the benefits and risks of different companies, help investors and creditors make reasonable decisions, and choose more profitable companies.

2.3.1 Profitability Ratios

Profitability ratios are common "return" ratios: "return on assets", "return on equity", etc. It analyzes the enterprise's ability to generate profits from investment capital in a specific period, and is an important factor affecting the enterprise's overall value and the value of its issued securities.

Profitability ratios correlate profits with other financial information such as sales, equity, or assets. There are four basic ratios, namely operating profit margin, net profit margin, return on assets and return on equity. These ratios measure certain aspects of management's operational efficiency, which is the ability of management to make a profit given a given level of resources. Generally, the higher the ratio, the higher the profitability ratio, and the higher the enterprise's competitiveness.

Although liquidity indicators are the most important indicators of short-term corporate health, profitability indicators are the most important in the long term. In the long run, companies must consistently show a profit to remain viable and provide their owners with a satisfactory original return on investment.

Operating Profit Margin (OPM) is an indicator of how well a enterprise manages its business and represents the percentage of revenue available to cover operating and other expenses, showing the enterprise's ability to use assets and control costs. The higher the operating profit margin, the enterprise has a competitive advantage in production costs or

lower overhead costs, and the higher the profitability.

$$OPM = \frac{EBIT}{Rev.} \tag{2.5}$$

Net Profit Margin (NPM) represents the ratio of the enterprise's net profit to its income, and it indicates how much of the enterprise's revenue per dollar is converted into profit. After deducting all expenses (operations, interest and taxes), the net profit margin is one of the important indicators of the enterprise's financial condition, which measures the profitability of the enterprise's production and sales. The higher the ratio, the stronger the enterprise's profitability.

$$NPM = \frac{EAT}{Rev.} \tag{2.6}$$

Return on Assets (ROA) shows the relationship between operating profit and total assets. It measures management's success in employing the enterprise's assets to generate a profit. It shows how efficiently an enterprise uses assets to earn profits. A higher ratio means that the enterprise uses less investment to achieve higher returns, and the more revenue it generates for a given asset level.

$$ROA = \frac{EBIT}{Assets} \tag{2.7}$$

Return on Equity (ROE) is a measure of the return on an enterprise's equity, including preferred and common shares. Returns are measured in net profit, which means that debt capital interest is not included in the return on equity. Return on equity measures management's success in maximizing return on owner's investment. In fact, this ratio is often referred to as "return on investment" and shows how much profit a enterprise can make from funds invested by shareholders, and measures how managers use stocks to fund their daily operations and subsequent development

$$ROE = \frac{EAT}{Equity} \tag{2.8}$$

2.3.2 Liquidity Ratios

The liquidity ratio is a financial indicator which is one of the financial ratios that assesses

a enterprise's ability to pay short-term debt. It measures the speed at which assets are converted into cash, which is the convenience of paying bills when the enterprise matures. It measures the repayment amount of cash, that is, the ability to meet its immediate or short-term liabilities. This ability depends on whether the business owns cash at the bank or expects to generate cash by selling goods and collecting receivables to pay the bills due as a sufficient amount.

The current ratio, quick ratio and cash ratio reflect the three indicators of the enterprise's ability to pay its current liabilities. Higher ratios mean stronger debt repayment ability, which analysts usually consider as the criterion for judging whether the enterprise can maintain operations.

The Current Ratio is one of the oldest and best-known indicators of short-term financial strength, the ability to repay short-term and long-term debt. This ratio determines whether current assets (cash or assets that are expected to be converted to cash within a year) are sufficient to cover current liabilities (debt must be paid within one year), and liquidity ratios below the industry average may indicate a higher risk of default. A higher current ratio means a healthier financial situation, and an enterprise's current ratio above 2 is generally considered good. This means that the enterprise has twice as much current assets as it has current liabilities. In addition, if the number exceeds 3, it is not very good. In this case, the enterprise owns too many assets but does not use them efficiently.

$$Current\ Ratio = \frac{Assets}{Liabilities} \tag{2.9}$$

The Quick Ratio is an indicator of the enterprise's short-term liquidity status and the enterprise's ability to repay short-term liabilities. A more conservative measure of liquidity than the current ratio, as it only includes more liquid assets. It is sometimes called the "acid test". The quick ratio is the enterprise's "quick assets" divided by current liabilities. In the case of insufficient inventory liquidity, the quick ratio may be a more appropriate liquidity indicator than the current ratio.

A higher quick ratio means better financial condition. If the result is 1, it is a normal quick ratio, which means that the enterprise has enough assets to liquidate immediately to pay off its current liabilities.

$$Quick\ Ratio = \frac{Assets - Inventories}{Liabilities} \tag{2.10}$$

The Cash Ratio is an indicator of the liquidity of an enterprise in a crisis and is used to measure the enterprise's ability to repay its current liabilities using only cash and cash equivalents. For the short term, the most important liquidity ratio is the cash ratio.

The cash ratio is more conservative than the quick ratio, and its ability to calculate an enterprise's ability to pay current liabilities relies solely on high-market short-term securities and cash and is considered an asset that can be used for payments.

Higher cash means that companies have more liquidity and can more easily repay debt. If the enterprise's cash ratio is less than 1, the current debt is greater than cash and cash equivalents, and the cash on hand is insufficient to cover short-term debt.

$$Cash\ Ratio = \frac{Cash + Marketable\ Securities}{Liabilities} \tag{2.11}$$

2.3.3 Solvency Ratios

The Solvency Ratio is an important indicator of an enterprise's solvency and other debt capabilities. It is sometimes called a financial leverage ratio. The lower the enterprise's solvency ratio, the stronger the default profitability. The leverage ratio (also known as the "safety" ratio) measures how much of an enterprise's assets are financed by debt. It is used to determine whether the enterprise is still able to repay debt and emphasizes the enterprise's ability to meet its long-term obligations.

Leverage is the use of other people's money to create profits for themselves, so debt "leverages" your investment. The leverage ratio measures the extent of this leverage. The reason leverage ratios are also called safety ratios is that too much leverage in a business can be risky. Lenders may view these ratios as safe ratios, and business owners may view them as leverage ratios. Using too little financial leverage, the enterprise has not reached the maximum profit potential of its investors. On the other hand, if the business environment deteriorates and there is too much debt, the enterprise may face a high risk of being unable to pay interest and principal.

There are three basic ratios under the solvency ratio, namely the debt ratio, the debt-to-debt ratio, and the interest coverage ratio.

The Debt Ratio is an indicator of operating leverage, which measures the amount of debt relative to the enterprise's total assets. The debt ratio focuses on the balance sheet, measuring the amount of debt capital relative to equity, indicating that the enterprise can use assets to pay off debt, and shows how much assets the enterprise sells to pay off all debt.

The higher the debt ratio, the higher the leverage ratio, and the greater the enterprise's risk. Higher levels of debt mean higher financial risk, which reduces solvency. Different industries, the absolute value of the ratio means different conditions of the enterprise. Therefore, in order to effectively judge an enterprise's risk level, we usually use multiple ratios.

$$Debt\ Ratio = \frac{Debt}{Assets} \tag{2.12}$$

The Debt-to-Equity Ratio measures the amount of debt capital relative to equity. Similar to the debt ratio, it is an indicator of how much assets are financed by debt. It is usually used to measure the extent to which an enterprise assumes debt as a means of asset use.

A high debt-to-equity ratio is usually associated with high risk. A higher ratio usually means weak solvency. The higher the ratio, the greater the enterprise's risk. If the debt-to-equity ratio is high, the enterprise uses a lot of debt in financing, which means that the total debt is much higher than the total equity and the risk level is higher.

$$Debt - to - Equity\ Ratio = \frac{Debt}{Equity} \tag{2.13}$$

Interest Coverage Ratio is the combination of debt ratio and profitability ratio. It shows the enterprise's ability to pay off interest and the time to pay interest before tax. It is usually used to assess the enterprise's operating profit ability to fulfill its debts (pay interest and repay the principal of debt).

This ratio is calculated by dividing income before interest and taxes by the interest paid for a period. The higher the ratio, the stronger the solvency and the healthier the enterprise. Usually this ratio is about 2.5. If this number is 1.5 or less, no one will be willing to lend money to the enterprise because the risk of default is very high.

$$Interest\ Coverage = \frac{EBIT}{Interest\ Paid} \tag{2.14}$$

2.3.4 Asset Management Ratios

Asset management ratios, also called activity ratio or operating efficiency ratio, is a measure of how well a enterprise manages various activities, especially the efficiency of managing the use of various assets and the effectiveness of the enterprise in terms of accounts receivable, inventory, and investment in fixed assets . Measure the enterprise's relative efficiency based on its use of assets, leverage, or other similar balance sheet items.

The use of asset efficiency has a direct impact on liquidity, and the enterprise will convert assets into sales as soon as possible, because the shorter the cycle, the higher the sales in a certain period. The average collection period (ACP), accounts receivable turnover rate, inventory turnover rate (IT), and total asset turnover rate (TAT) are all included in the asset management ratio.

Average Collection Period (ACP) is the time that an enterprise receives funds in the form of a receivable promised by the other party. It represents the average number of days between the date of sale by the lender and the date of sale by the lender.

A shorter average collection period is better than a longer average collection period. In a certain period, the shorter the turnover days, the greater the liquidity of accounts receivable, which means that the enterprise can obtain the payment faster.

$$ACP = \frac{Accounts\ Receivable}{Revenues} * 360 \tag{2.15}$$

Accounts Receivable Turnover is also called the debt collection ratio, which refers to the average number of times that receivables are converted into cash in a certain period of time. It is an indicator used to measure the flow of accounts receivable of an enterprise,

and it is the ratio of the enterprise's net credit sales to the average balance of accounts receivable within a certain period.

The turnover rate of accounts receivable measures the enterprise's activity rate using asset efficiency. It is calculated by dividing revenue by accounts receivable for the same period, usually one year. Generally speaking, the higher the receivable turnover rate, the shorter the average collection period, the faster the collection of receivables, and the higher the efficiency of credit and collection. Otherwise, the working capital of the enterprise will stagnate too much on the accounts receivable, affecting the normal capital turnover.

$$ART = \frac{Revenues}{Account\ Receivable} \tag{2.16}$$

Inventory Turnover refers to the ratio of the total amount of outbound inventory (total quantity) in a certain period of time to the average amount of inventory (or quantity) in that period of time. It refers to the speed of inventory turnover during a year, comparing the cost of sales and average inventory over a period of time, which is helpful to show the effectiveness of inventory management.

The cost of goods sold is usually divided by the average inventory to calculate inventory turnover, which helps companies make better decisions about pricing, marketing, and buying inventory. Increasing inventory turnover has a positive effect on speeding up capital turnover, improving capital utilization and realizing capacity.

$$IT = \frac{Costs\ of\ goods\ sold}{Average\ Inventory} \tag{2.17}$$

Total Asset Turnover refers to the ratio of an enterprise's sales (operating) income to the average total assets within a certain period of time. It is the value ratio of the enterprise's income to the total assets. It indicates the efficiency of the enterprise's use of assets to generate income. The total asset turnover is an indicator that comprehensively evaluates the operating quality and utilization efficiency of an enterprise's assets and measures the value of an enterprise's sales or income relative to its asset value.

The greater the turnover rate, the faster the total asset turnover, reflecting the stronger the sales ability, the better the performance of the enterprise. Enterprises can use the method

of small profits but quick turnover to accelerate the turnover of assets and bring about an absolute increase in profits.

$$TAT = \frac{Revenues}{Assets} \tag{2.18}$$

2.4 Pyramidal Decompositions

Pyramid decomposition is also called DuPont analysis. The DuPont analysis method is a financial analysis method created and used by DuPont in the United States. Its biggest feature is to organically combine a series of financial ratios and use the progressive relationship between each ratio to reveal the internal relationship between them, to find out the relevant factors that affect the change of a certain ratio. It provides a reliable basis for enterprise managers to control this benign change in ratio.

It is a method that combines the profitability, operating efficiency and risk tolerance of an enterprise to evaluate the effectiveness of corporate financial management, return on net assets, the competitiveness of the enterprise, and how to improve its efficiency.

The DuPont analysis method divides the ROE into three basic components: net profit margin, total asset turnover, and financial leverage. Through these ratios, we can know how to find out how specific factors affect the enterprise's performance and the enterprise's operating deficiencies.

The first step in using DuPont analysis is to use pyramid decomposition to decompose ROE, which means that the ROE ratio is decomposed by three component ratios.

$$ROE = \frac{EAT}{Equity} = \frac{EAT}{Revenues} \cdot \frac{Revenues}{Total\ Assets} \cdot \frac{Total\ Assets}{Equity} \tag{2.19}$$

Where EAT / Revenues is net profit, margin Revenues / Total assets is assets turnover Total assets / Equity = financial leverage.

If we want to separate the impact of tax and interest, we can decompose the profit margin as follows:

$$\frac{EAT}{Revenues} = \frac{EAT}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{Revenues} \tag{2.20}$$

Where EAT / EBT is tax burden, EBT / EBIT is interest burden and EBIT / Revenues is

operating margin.

After substitution in DuPont analysis, we can get the follows:

$$ROE = \frac{EAT}{Equity} = \frac{EAT}{EBT} \cdot \frac{EBT}{EBIT} \cdot \frac{EBIT}{Revenues} \cdot \frac{Revenues}{Total\ Assets} \cdot \frac{Total\ Assets}{Equity} \quad (2.21)$$

We can get:

$$ROE = Tax\ burden * Interest\ burden * Operating\ profit\ margin * Assets\ turnover * Financial\ leverage$$

Through the decomposition of ROE, we can know that ROE is affected by taxation, their interest payment, operating profit margin, assets turnover and financial leverage.

2.4.1 Methods of Influence Quantification

We will introduce the methods that affect quantization, including four methods of gradual changes, logarithmic decomposition, functional decomposition and integral decomposition.

Methods of gradual changes are related to the absolute change of the component ratio. The number of component ratios is equal to the number of influencing quantization equations, regardless of the positive or negative values in the component ratios or basic ratios. But the disadvantage is that the order of decomposition will affect the result. When decomposing, we use 3 component ratios to analyze the gradual change:

$$\Delta X_{a_1} = \Delta a_1 \cdot a_{2,0} \cdot a_{3,0}$$
$$\Delta X_{a_2} = a_{1,1} \cdot \Delta a_2 \cdot a_{3,0}$$
$$\Delta X_{a_3} = a_{1,1} \cdot a_{2,1} \cdot \Delta a_3 \quad (2.22)$$

Where x is basic ratio, Δx is absolute change in the basic ratio, a is component ratio, Δa is absolute change in the component ratio, ΔX_{a_1} is absolute change in the basic ratio caused by the change in the first (X_{a_1}) component ratio.

The **logarithmic decomposition method** is easier than the methods of gradual changes. No matter how many component ratios we have, we only need a formula that affects quantification. The impact of the component is calculated as:

$$\Delta X_{a_i} = \frac{\ln I_{a_i}}{\ln I_x} \cdot \Delta X \tag{2.23}$$

Where x *is basic ratio,* Δx *is absolute change in the basic ratio,* $I_x = \frac{X_1}{X_0}$ *is index of change in basic ratio,* $I_a = \frac{a_{i,1}}{a_{i,0}}$ *is index of change in component ratio.*

The **functional decomposition method** is applicable to the relative change of the basic ratio and the component ratio. This method is applicable regardless of the signs of the relative change. The formula is calculated as follows:

$$\Delta x^{relat.} = R_x = \frac{x_1 - x_0}{x_0}, \quad \Delta a_i^{relat.} = R_{a_i} = \frac{a_1 - a_0}{a_0} \tag{2.24}$$

The effect of the three component ratios on the basic ratio is as follows:

$$\Delta x_{a_1} = \frac{1}{R_x} \cdot R_{a_1} \cdot \left(1 + \frac{1}{2} \cdot R_{a_2} + \frac{1}{2} \cdot R_{a_3} + \frac{1}{3} \cdot R_{a_2} \cdot R_{a_3}\right) \cdot \Delta x \tag{2.25}$$

$$\Delta x_{a_2} = \frac{1}{R_x} \cdot R_{a_2} \cdot \left(1 + \frac{1}{2} \cdot R_{a_1} + \frac{1}{2} \cdot R_{a_3} + \frac{1}{3} \cdot R_{a_1} \cdot R_{a_3}\right) \cdot \Delta x \tag{2.26}$$

$$\Delta x_{a_3} = \frac{1}{R_x} \cdot R_{a_3} \cdot \left(1 + \frac{1}{2} \cdot R_{a_1} + \frac{1}{2} \cdot R_{a_2} + \frac{1}{3} \cdot R_{a_1} \cdot R_{a_2}\right) \cdot \Delta x \tag{2.27}$$

The process of the **integral decomposition method** is similar to the functional decomposition method, and it is the simplest method to influence quantification among these methods. Three component ratios are used in the decomposition:

$$\Delta x_{a_1} = \frac{R_{a_1}}{R_{x^*}} \cdot \Delta x, \quad \Delta x_{a_2} = \frac{R_{a_2}}{R_{x^*}} \cdot \Delta x, \quad \Delta x_{a_3} = \frac{R_{a_3}}{R_{x^*}} \cdot \Delta x$$

$$R_{x^*} = \sum_{j=1}^{N} R_{a_j} \tag{2.28}$$

The impact of the component ratio is as follows:

$$\Delta x_{a_j} = \frac{R_{a_j}}{R_x} \cdot \Delta x \tag{2.29}$$

3. Profile of a Selected Company

In this chapter, we will introduce the basic situation of L'Oréal and what factors make L'Oréal successful. This chapter will focus on the four aspects of development history, operation, major products and strategy.

Main sources of this chapter are from *History of L'Oréal Group* and *Equity Research from HUAITAI SECURITIES.* [https://www.loreal-finance.com/fr]

3.1 The development history of L'Oréal Group

L'Oréal Group is one of the Fortune Global 500. After nearly a century of hard work, L'Oréal has become a world leader in the cosmetics industry from a small family enterprise, and has developed into a business of skin care, makeup, men's beauty, hair care, hair dyeing and other cosmetics comprehensive group. Up to now, L'Oréal Group has more than 36 high-quality brands such as Lancôme and Yves Saint Laurent, operating in 150 countries and regions, and has more than 86,000 employees worldwide.

We can divide the development history of the L'Oréal Group into three stages, namely the start-up period, the expansion period and the maturity period

1909-1962 was the initial period for the development of L'Oréal, and the initial development of hair dye products. In 1907, the chemist Eugen Schuler invented a new hair dye formulation and named it Oréal. In 1909, Eugen Schuler founded L'Oréal, which mainly designed, manufactured and sold hair dyes. After the First World War, women's social status improved and the demand for hair dyes increased. Oréal hair dyes succeeded in adapting to the times and had more influence.

1963-2000 was the expansion period for L'Oréal's development. In 1963, L'Oréal went public in France. Since then, it has opened the road of extended mergers and acquisitions and entered the skin care, makeup and perfume categories. In 1965, the enterprise acquired Lancôme and entered the high-end cosmetics market. In 1989, the American skincare brand Helena Rubinstein was acquired, and an agency authorization agreement was signed with Giorgio Armani. In the same year, it acquired La Roche-Posay, a high-tech dermatology product brand. The acquisition of Maybelline in 1996 made L'Oréal a

leading American enterprise. After a series of acquisitions, L'Oréal has basically covered the entire line of cosmetics to meet the comprehensive needs of consumers from top brands, high-end brands to mass brands.

Since 2001, the development of the L'Oréal Group has entered a mature period. The leading position of cosmetics has been initially established, and it has continued to research and innovate. Through continuous mergers and acquisitions, it can meet the emerging needs of people around the world for cosmetics. The acquisitions are mainly focused on skin care products, cosmeceutical products and beauty products. In recent years, the rapid development of social media and the growth of professional cosmetics sales channels such as Sephora and Ulta have promoted the rise of independent beauty brands. In 2014, the enterprise acquired the beauty brand NYX for US $ 500 million. In July 2016, it invested US $ 1.2 billion to acquire IT Cosmetics, a new American cosmetics brand.

3.2 Operation of L'Oréal Group

The Capital Composition of L'Oréal Group. In 1957, Eugen Schuler, the founder of L'Oréal, died, and her only daughter, Liliana Betango, became L'Oréal's largest shareholder. In 1963, the L'Oréal Group went public, and the Batancourt family maintained its status as a major shareholder, and it continues to this day. In 1972, in order to avoid being nationalized by the French government, L'Oréal exchanged shares with Swiss food giant Nestlé. After a series of capital operations, the Betancourt family and Nestle held 31.0% and 29.6% of L'Oréal's shares, respectively. So far, Nestlé has become the second largest shareholder of L'Oréal Group.

The L'Oréal Group implements the principle of strict separation of control and management rights. The Betanco family has four seats on the board of directors, and only directly holds shares and does not directly participate in management. The current CEO and Chairman of the Board of Directors Jean-Paul Agon joined the L'Oréal Group in 1978. From product manager, he has served as L'Oréal (Greece), L'Oréal (Asia) and L'Oréal (United States). Since 2006, he has been the CEO of the L'Oréal Group and has served as Chairman of the Board of Directors since 2011.

Led by Jean-Paul Agon, L'Oréal has become a pioneer in the digital revolution and has achieved rapid development in emerging markets and channels such as Asia and travel retail. It has become a global leader in cosmetics expansion.

3.3 The major products of L'Oréal Group

We can roughly divide the products into four categories. Firstly, Consumer products, that is, high-tech products with competitive prices, are sold through mass retail channels. Such as L'Oréal Paris and Garnier.

Professional products, a combined brand consisting of a series of novel products to meet the needs of beauty salons and professionals. Such as L'Oréal Professional.

Luxury goods, an internationally renowned brand, are sold in specialty stores and provide additional services. Such as Giorgio Armani and Ralph Lauren.

Active beauty, skin beauty products sold at professional counters and pharmacies, are provided by dermatologists and professional beauticians. For example, La Roche-Posay

Table 3-1 The classification of L L'Oréal products

Top brand	Helena Rubinstein
Second-line products	Lancôme
Third-line or the following third-line products	Kiehls, Garnier
Make-up brands	Shuuemura, Maybelline
Cosmeceutical brands	La Roche-Posay, SkinCeuticals
Perfume brands	GiorgioArmaniParfums, RalphLaurenParfums

Source: L'Oréal Annual Report

The classic product of L'Oréal Group Lancôme Black Vial Essence Foundation is the world's first skin care product based on "gene maintenance". It is also a star product of Lancôme. Since its launch in 2009, it has merged 9 skin beauty patents and has passed 197 formula tests and won more than 150 beauty awards

3.4 The strategy of L'Oréal Group

The L'Oréal Group is the world leader in the cosmetics industry, and its sales performance has been steadily increasing globally. So far, L'Oréal's development momentum in various countries is still rapid, and its power is derived from the four core competitive advantages of brand, channel, marketing, and R & D.

3.4.1 Brand Portfolio

Extended M & A to develop multiple brand portfolios. Since 1965, L'Oréal has begun to increase its brand expansion through outreach acquisitions, and outreach mergers and acquisitions have become the main path for the Group to expand its brand matrix. At present, its 34 sub-brands cover skin care, make-up, cosmeceuticals, hairdressing, perfumes, beauty equipment and other fields, of which 32 are from the extension, only L'Oréal Paris, Paris Corse is a self-made brand, and the rest are acquired through mergers and acquisitions. At present, the L'Oréal Group has nine super brands with annual sales of more than 1 billion euros, including L'Oréal Paris, Lancôme, Garnier, Maybelline, Yves Saint Laurent, L'Oréal Paris Professional Hairdressing, Giorgio Armani, Kiehl's and La Roche-Posay.

3.4.2 Multi-channel Operation

Multi-channel operation highlights brand influence. L'Oréal's channels are widely distributed, including seven major channels such as hair salons, supermarket retail, department store counters, brand retail stores, pharmacies, travel retail, and e-commerce. Different grades of brands form differentiated sales channels. The brands of Volkswagen Cosmetics are distributed in major retail channels and small and medium-sized supermarkets. The high-end cosmetics department retails in department stores and cosmetics stores, the professional products department provides products for salons all over the world, and the active cosmetics department mainly sells products in pharmacies.

With the rapid development of e-commerce, L'Oréal needs to coordinate all orders and related data on a global scale, and at the same time it needs to stock more than 1 billion consumers and nearly 500,000 delivery points globally in a short period of time. To this end, L'Oréal has completely changed the supply chain in order to respond flexibly and effectively to the changes brought about by e-commerce.

As transportation costs increase, L'Oréal has been exploring new ways to combine online and offline channels. For example, at the 18-year L'Oréal Super Brand Day, an exquisite joint poster was published online with the theme "My Beautiful Joint Name", which contains high-quality communication and interaction. Keep abreast of offline fashion hot spots, take advantage of color run, a form of activity that young people are keen on, to warm up for Super Brand Day in the target crowd gathering place, increase exposure and spread the audience to the target crowd.

3.4.3 Digital Marketing

Digital marketing caters to consumers' changing trends. L'Oréal realized early on that digital reforms will sweep the beauty industry, continue to invest in this, and try to digitize consumer decision-making processes, continue to increase KOL, cross-border marketing, content marketing and other creative marketing methods.

As far as KOL is concerned, L'Oréal is expanding and industrializing the "Online Celebrity Shopping Guide". Through layer-by-layer selection, large-scale recruitment of talents, training of 15 contracted talents every quarter, the enterprise provides props and technical support.

In terms of cross-border marketing, L'Oréal Makeup Paris in 2018 worked with the National Museum of China to launch a limited-edition lipstick gift box of the National Museum.

In terms of content marketing, L'Oréal has found that consumers have a lot of curiosity about celebrities through research. They try to imitate the makeup of celebrities. For this, L'Oréal has created the concept of "star makeup, celebrity products, you are also worth having".

The consumer's purchase decision process can be decomposed into understanding the brand, considering buying the brand, completing the purchase behavior, and sharing experience. In terms of brand awareness, L'Oréal has published video advertisements and beauty tutorials on various platforms; in the decision-making stage, digitizing purchase

behaviors through e-commerce and borrowing social media to share post-purchase evaluations. L'Oréal is trying to penetrate digital into every step of consumer decision-making.

3.4.4 The Power of Development and Innovation

Strong R & D force lays the foundation for development. L'Oréal's research and development direction are based on the "universal beauty" strategy. Based on globalization, coupled with the understanding and respect for the characteristics of local consumers, and reflecting these characteristics in product development, truly tailor-made products fully meet the needs of local consumers. For example, researchers from the L'Oréal Group took the lead in reconstructing a Chinese skin model in China. At present, 70% of the products sold in the Chinese market come from the cooperation between the L'Oréal Shanghai Pudong R & D Center and the L'Oréal Group's French research department.

The R & D system supports R & D strength. Firstly, continue to acquire global skincare related knowledge to discover new active ingredients. Second, focus on the development of various formulation systems, and then apply to various categories of products, each year L'Oréal's R & D team will develop thousands of formulations. Third, product development, scientific and strict evaluation of product safety and efficacy, to ensure that products successfully enter the market.

As of 2018, L'Oréal has 22 R & D centers in Europe, the United States, Japan, China, India and Brazil. In 2017, R & D expenditure reached 877 million euros, and R & D expenditure over the years accounted for 3% -3.4% of revenue. R & D investment has brought rapid iteration of the enterprise's new products, and the number of new products updated each year accounts from 15% to 20%.

4. Processing Financial Analysis of a Selected Company

In this chapter, we will use the calculation methods mentioned in Chapter 2 to analyze the financial situation of the L'Oréal Group, focusing on the use of financial analysis methods, including common-size analysis, calculating financial ratios, DuPont analysis, and influence quantification.

Firstly, we start with the common-size analysis, then calculate the financial ratios. The financial ratios are divided into five parts: profitability ratios, liquidity ratios, solvency ratios, and asset management ratios. Finally, we will use the DuPont analysis to analyze the L'Oréal Group. The analysis data comes from the financial statements of L'Oréal Group from 2013 to 2018. According to the enterprise's annual report, the financial statements are in millions of euros.

4.1 Common-size Analysis of L'Oréal

In this part, we will conduct common-size analysis of the L'Oréal Group, including horizontal common-size analysis and vertical common-size analysis, focusing on describing the trends and differences in the data in the financial statements over time. The following Table 4-1 and Table 4-2 are the simplified version of the balance sheet and income statement of L'Oréal Group from 2013 to 2018.

Table 4-1 Balance sheet of L'Oréal from 2013 to 2018(€ millions)

year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Non-current Assets	21485.1	23284.2	24457.6	25584.6	24320.1	25991.2
Current Assets	9389.6	8774.6	9253.7	10045.6	11019	12466.3
Total Assets	**30874.7**	**32058.8**	**33711.3**	**35630.2**	**35339.1**	**38457.5**
Equity	**22651**	**20196.9**	**23617**	**24504**	**24818.5**	**26933.6**
Non-current Liabilities	1928.6	2595.6	1920.6	1918.9	1347.2	1412.2
Current Liabilities	6295.2	9266.3	8173.7	9207.3	9173.4	10111.6
Total Liabilities	**8223.8**	**11861.9**	**10094.3**	**11126.2**	**10520.6**	**11523.8**
Total Equity and Liabilities	**30874.8**	**32058.8**	**33711.3**	**35630.2**	**35339.1**	**38457.4**

Source: Annual Report of L'Oréal

As Table 4-1 shows, the total assets of the L'Oréal Group have been increasing in recent years. As assets increase, liabilities also increase. Current liabilities continue to increase,

and non-current liabilities increase in the early stage, but significantly decrease in the later period. From 2017 to 2018, equity increased rapidly, from € 248.185 million to € 26933.6 million. The reason is that L'Oréal Group has acquired Canadian enterprise ModiFace, leading the world in the application of beauty artificial intelligence.

Table 4-2 Income Statement of L'Oréal from 2013 to 2018(€ millions)

year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Net Sales	22124.2	22532	25257.4	25837.1	26023.7	26937.4
Cost of Sales	-6379.4	-6500.7	-7277.4	-7341.7	-7359.2	-7331.6
Gross Profit	**15744.8**	**16031.3**	**17980**	**18495.4**	**18664.5**	**19605.8**
Operating Expenses	-11984.4	-12140.6	-13592.3	-13955.5	-13988.2	-14683.8
Operating Profit (EBIT)	**3760.4**	**3890.7**	**4387.7**	**4539.9**	**4676.3**	**4922.0**
Other income and expense	167.5	-0.3	129.7	-216.6	50.8	261.7
Profit before Tax and Associates	**3928**	**3890.4**	**4517.4**	**4323.4**	**4727**	**5183.7**
Taxation	-1046.6	-1124.5	-1218.9	-1214.7	-901.4	-1284.2
Net Profit (EAT)	**2961.4**	**4908.6**	**3298.5**	**3108.7**	**3585.5**	**3899.5**

Source: Annual Report of L'Oréal

Table 4-2 shows that the L'Oréal Group's revenue increased rapidly from 2013 to 2018, reaching € 26937.4 million in 2018. The cost of sales increased due to the increase in supply, but the revenue growth was greater than the cost of sales growth, gross profit continued to increase. Operating expenses are increasing rapidly, but pre-tax income is still increasing. Compared with previous years, the financial income in 2016 dropped a lot, and it was not recovered until 2018.

4.1.1 Horizontal Common-size Analysis of L'Oréal

Horizontal common-size analysis, also known as time series analysis, focuses on the study of changes in financial statement data over time. In this section, we choose the previous year as the benchmark to calculate the absolute change of each item. Then we will use the item itself as a benchmark and calculate the relative change based on the absolute change of each item. Finally, we compare these changes to better understand the financial situation of the L'Oréal Group.

Firstly, we analyze the absolute and relative changes of each item in the balance sheet. Table 4-3 shows the absolute change of each item in the balance sheet.

Table 4-3 Absolute change of each item in balance sheet of L'Oréal (€ million)

year	*2013/14*	*2014/15*	*2015/16*	*2016/17*	*2017/18*
Non-current Assets	1799.1	1173.4	1127	-1264.5	1671.1
Current Assets	-615	479.1	791.9	973.4	1447.3
Total Assets	**1184.1**	**1652.5**	**1918.9**	**-291.1**	**3118.4**
Equity	**-2454.1**	**3420.1**	**887**	**314.5**	**2115.1**
Non-current Liabilities	667	-675	-1.7	-571.7	65
Current Liabilities	2971.1	-1092.6	1033.6	-33.9	938.2
Total Liabilities	**3638.1**	**-1767.6**	**1031.9**	**-605.6**	**1003.2**
Total Equity and Liabilities	**1184**	**1652.5**	**1918.9**	**-291.1**	**3118.3**

Source: Own Calculation

From the table, we can directly see the magnitude of data changes. If the absolute change is positive, it means that the item data is growing. On the contrary, if it is negative, it means that the item data is declining. Table 4-4 shows the relative change of each item in the balance sheet.

Table 4-4 Relative change of each item in balance sheet of L'Oréal (%)

year	*2013/14*	*2014/15*	*2015/16*	*2016/17*	*2017/18*
Non-current Assets	8.37	5.04	4.61	-4.94	6.87
Current Assets	-6.55	5.46	8.56	9.69	13.13
Total Assets	**3.84**	**5.15**	**5.69**	**-0.82**	**8.82**
Equity	**-10.83**	**16.93**	**3.76**	**1.28**	**8.52**
Non-current Liabilities	34.58	-26.01	-0.09	-29.79	4.82
Current Liabilities	47.20	-11.79	12.65	-0.37	10.23
Total Liabilities	**44.24**	**-14.90**	**10.22**	**-5.4**	**9.54**
Total Equity and Liabilities	**3.8**	**5.15**	**5.69**	**-0.82**	**8.82**

Source: Own Calculation

As can be seen from Table 4-3 and Table 4-4, assets have been growing substantially from 2013 to 2016, and it has gradually increased with an absolute change from € 1184.1 million to € 11918.9 millions. However, in 2017, assets decreased by € 291.1 million, shrinking by 0.82%.

In 2014, the decline in current assets reached 6.55%, but it increased significantly in other

years. Non-current assets have been increasing, but the negative growth was reduced by € 1264.5 million in 2017, and current assets still maintained growth, indicating that the L'Oréal Group's asset structure has undergone major adjustments in 2017.

In terms of liabilities, current liabilities decreased significantly in 2015, a decrease of € 1092.6 million. A slight decline in 2017, but rapid growth in 2018, an increase of 10.23%. It shows that the L'Oréal Group has expanded the size of the group, taking up a lot of funds. Non-current liabilities decreased in 2015 and 2017, and it began to grow in 2018. Equity has increased, especially in the rapid growth in 2015 and 2018, with an increase of € 3420.1 million and € 2115.1 million. The growth was the smallest in 2017 and negative growth in 2014. Equity is share capital, and having more equity is more benefits for the L'Oréal Group.

Then we will analyze the absolute and relative changes of the items from 2013 to 2018 in the income statement. Table 4-5 shows the absolute change in the income statement.

Table 4-5 Absolute change of each item in income statement of L'Oréal (€ million)

year	*2013/14*	*2014/15*	*2015/16*	*2016/17*	*2017/18*
Net Sales	407.8	2725.4	579.7	186.6	913.7
Cost of Sales	-121.3	-776.7	-64.3	-17.5	27.6
Gross Profit	**286.5**	**1948.7**	**515.4**	**169.1**	**941.3**
Operating Expenses	-156.20	-1451.7	-363.20	-32.70	-695.60
Operating Profit (EBIT)	**130.3**	**497.0**	**152.2**	**136.4**	**245.7**
Other income and expense	-167.8	130.0	-346.3	267.4	210.9
Profit before Tax and Associates	**-37.6**	**627.0**	**-194**	**403.6**	**456.7**
Taxation	-77.9	-94.4	4.2	313.3	-382.8
Net Profit (EAT)	**1947.2**	**-1610.1**	**-189.8**	**476.8**	**314**

Source: Own Calculation

From Table 4-5, we can know that net sales have been increasing in recent years, with an increase of € 2725.4 million in 2015 and an increase of € 913.7 million in 2018.

Since 2013, the cost of goods has been declining, which shows that the enterprise is reducing costs and expenses to achieve the goal of increasing net profit. From 2013 to 2015, taxation continued to fall, and taxation increased from 2015 to 2017, but in 2018 it

decreased by € 382.8 million, which indicates that L'Oréal Group is constantly adjusting its tax structure. Finally, we can see that the net profit has changed too much in the early period. The growth from 2013 to 2014 reached € 1947.2 million, but it fell by € 1610.1 million in 2015. In the later annual report, net profit increased steadily. Table 4-6 shows the relative change of each item.

Table 4-6 Relative change of each item in income statement of L'Oréal (%)

year	*2013/14*	*2014/15*	*2015/16*	*2016/17*	*2017/18*
Net Sales	1.84	12.10	2.30	0.72	3.51
Cost of Sales	1.90	11.95	0.88	0.24	-0.38
Gross Profit	**1.82**	**12.16**	**2.87**	**0.91**	**5.04**
Operating Expenses	1.30	11.96	2.67	0.23	4.97
Operating Profit (EBIT)	**3.4**	**12.77**	**3.47**	**3.00**	**5.25**
Other income and expense	-100.18	-43333.3	-267.00	-123.45	415.16
Profit before Tax and Associates	**-0.96**	**16.12**	**-4.29**	**9.34**	**9.66**
Taxation	7.44	8.39	-0.34	-25.79	42.47
Net Profit (EAT)	**65.75**	**-32.80**	**-5.75**	**15.34**	**8.76**

Source: Own Calculation

From Table 4-6 we can study the change of trend. Net sales increased by 12.1% in 2015, and the growth was relatively stable. In 2016, net sales only increased by 0.72%. Since 2014, net profit has been on a downward trend, but after acquiring Atelier Cologone and IT Cosmetic in 2016 and ModiFace in 2018, net profit achieved steady growth. This shows that with the economic recession, there are many competing companies, and L'Oréal Group should implement better competitive strategies to increase sales and profits.

4.1.2 Vertical Common-size Analysis of L'Oréal

In this part, we use vertical common-size analysis to calculate and analyze the proportion of different items in the balance sheet and income statement, focusing on analyzing the internal structure, so as to analyze which item plays an important role in the financial statements. We choose total assets, total liabilities, equity and income as the benchmark, and then calculate the proportion of different items in the benchmark.

Firstly, we analyze the balance sheet and divide the balance sheet into two parts: assets, liabilities and equity, using total assets, total equity and liabilities as a benchmark. Table

4-7 reflects the structure of the asset. Table 4-8 reflects the structure of liabilities and equity.

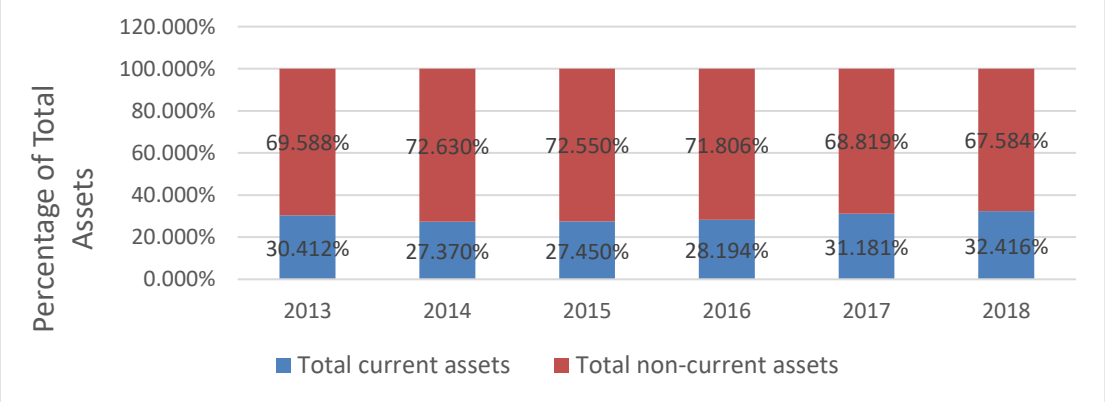
Table 4-7 The proportion of assets of L'Oréal from 2013 to 2018 (%)

year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Total assets	100.000	100.000	100.000	100.000	100.000	100.000
Total non-current assets	**69.588**	**72.630**	**72.550**	**71.806**	**68.819**	**67.584**
Goodwill	20.10	23.47	24.18	24.68	25.11	24.96
Other intangible assets	6.82	8.47	8.73	8.9	7.30	8.03
Property, plant and equipment	9.36	9.80	10.10	10.54	10.11	9.42
Non-current financial assets	29.81	28.29	27.92	26.12	24.81	23.66
Investments in associates	-1.41	0.00	0.00	0.00	0.00	0.02
Deferred tax assets	2.08	2.60	1.63	1.54	1.50	1.49
Total current assets	**30.412**	**27.370**	**27.450**	**28.194**	**31.181**	**32.416**
Inventories	6.75	7.06	7.24	7.57	7.06	7.34
Trade accounts receivable	9.79	10.29	10.76	11.06	11.10	10.36
Other current assets	4.86	3.74	4.41	3.99	3.94	3.92
Current tax assets	0.40	0.30	0.89	0.67	0.45	0.42
Cash and cash equivalents	8.61	5.98	4.15	4.90	8.62	10.38

Source: Own Calculation

Chart 4-1 shows the vertical common-size analysis of assets of L'Oréal from 2013 to 2018.

Chart 4-1 Vertical common-size analysis of assets of L'Oréal from 2013 to 2018



Source: Own Calculation

According to Table 4-7 and Chart 4-1, we can understand the following enterprise operating characteristics. First, we can find that the ratio of current assets to non-current assets was stable, and the total non-current assets accounted for the largest proportion of total assets from 2013 to 2018, which remained stable at more than 67%. This shows that total non-current assets are the most important part of total assets and occupy a large part of the enterprise's assets from 2013 to 2018. Because goodwill, other intangible assets, property, plant and equipment, non-current financial assets are relatively large and stable.

From 2013 to 2017, the proportion of total current assets showed a steady upward trend. If a enterprise has a high proportion of current assets, the enterprise can quickly convert these assets to cash when faced with risks, so that it can deal with financial problems faster. The proper ratio of non-current assets and current assets is more conducive to a enterprise's development. Therefore, in my opinion, if the current assets can be appropriately increased, the L'Oréal Group can develop better. The total inventory has increased, and L'Oréal should pay attention to the inventory problem, expand sales channels, and meet market demand. Cash and cash equivalents and accounts receivable have shown an upward trend in the past six years, but they have not fluctuated much. In short, the enterprise has maintained a good operating state.

Then, we use debt and equity as a benchmark for vertical common-size analysis. Table 4-8 shows the proportion of each item in total equity and liabilities of L'Oréal and Chart 4-2 Vertical common-size analysis of equity and liabilities of L'Oréal.

Table 4-8 The proportion of each item in total equity and liabilities of L'Oréal from 2013 to 2018 (%)

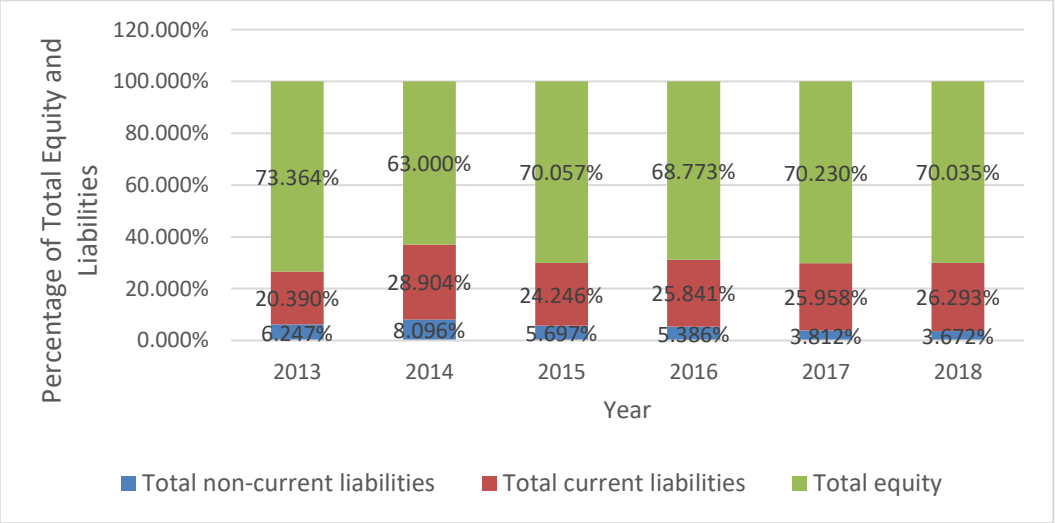
year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Total non-current liabilities	6.25	8.10	5.70	5.39	3.81	3.67
Total current liabilities	20.39	28.90	24.25	25.84	25.96	26.29
Total equity	73.37	63.00	70.06	68.77	70.23	70.04
Income tax	0.58	0.52	0.45	0.49	0.45	0.56
Total equity and liabilities	100	100	100	100	100	100

Source: Own Calculation

From Table 4-8, we can observe that the proportion of total equity is very high and stable.

Equity belongs to capital, and more share capital is beneficial to the development of the enterprise. Overall, total equity has fallen by 3.33% in the past six years. From 2013 to 2014, the total equity fell from 73.37% to 63%, back to 70.06% in 2015, and has remained at around 70% for the next two years, which means that the equity and total liabilities have maintained a relatively balanced proportion. From 2013 to 2018, the total non-current liabilities fell from 6.25% to 3.67%, which means that the enterprise's total non-current liabilities have decreased in the past six years.

Chart 4-2 Vertical common-size analysis of equity and liabilities of L'Oréal from 2013 to 2018



Source: Own Calculation

In Chart 4-2, we can directly feel the results of the vertical common-size analysis of liabilities and equity. In addition to the fluctuation of current debt, the ratio of total equity and total liabilities of L'Oréal Group remained stable from 2013 to 2018, and the debt and equity structure did not change significantly.

Table 4-9 The proportion of each item in total revenues of L'Oréal from 2013 to 2018

%	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Net Sales	100	100	100	100	100	100
Cost of Sales	28.83	28.85	28.81	28.42	28.28	27.22
Gross Profit	**71.17**	**71.15**	**71.19**	**71.58**	**71.72**	**72.78**
Operating Expenses	54.17	53.88	53.82	54.01	53.75	54.51
Operating Profit (EBIT)	**17.00**	**17.27**	**17.37**	**17.57**	**17.97**	**18.27**
Other income and expense	0.76	0.00	0.51	0.84	0.20	0.97
Profit before Tax and Associates	**17.75**	**17.27**	**17.89**	**16.73**	**18.16**	**19.24**
Taxation	4.73	4.99	4.83	4.70	3.46	4.77
Net Profit (EAT)	**13.39**	**21.79**	**13.06**	**12.03**	**13.78**	**14.48**

Source: Own Calculation

Table 4-9 reflects the structure of the income statement. In the vertical common-size analysis of the income statement, we will use income as a benchmark, and its proportion is 100%.

We can see the ratio of L'Oréal Group's net sales, net profit, operating expenses, operating profit and gross profit from 2013 to 2018. Over the past six years, gross profit margins have continued to increase, from 71.17% in 2013 to 72.78% in 2018, and net profit rose from 13.39% to 14.48%. In contrast, the operating expense ratio remained stable, rising from 54.17% in 2013 to 54.51% in 2018. Taxation increased from 4.73% to 4.77%, which indicates that the tax rate levied by the cosmetics industry is higher, and EBIT continues to rise, from 17% in 2013 to 18.27% in 2018

Using the vertical common-size analysis to understand the proportion of projects in income statement helps L'Oréal Group improve the enterprise's financial structure. In recent years, the percentage of net profit has been low. L'Oréal Group should appropriately adjust its business strategy, increase product innovation, use limited resources to reduce costs and expenses, and thus increase profits.

4.2 Financial Ratio Analysis

In this part, we will analyze the financial status and operating status of the L'Oréal Group from the four areas of profitability, liquidity, solvency and asset management by calculating the financial ratio. The data comes from 2013-2018 annual report of the L'Oréal Group. We use formulas (2.5) to (2.18) to calculate the financial ratio of L'Oréal

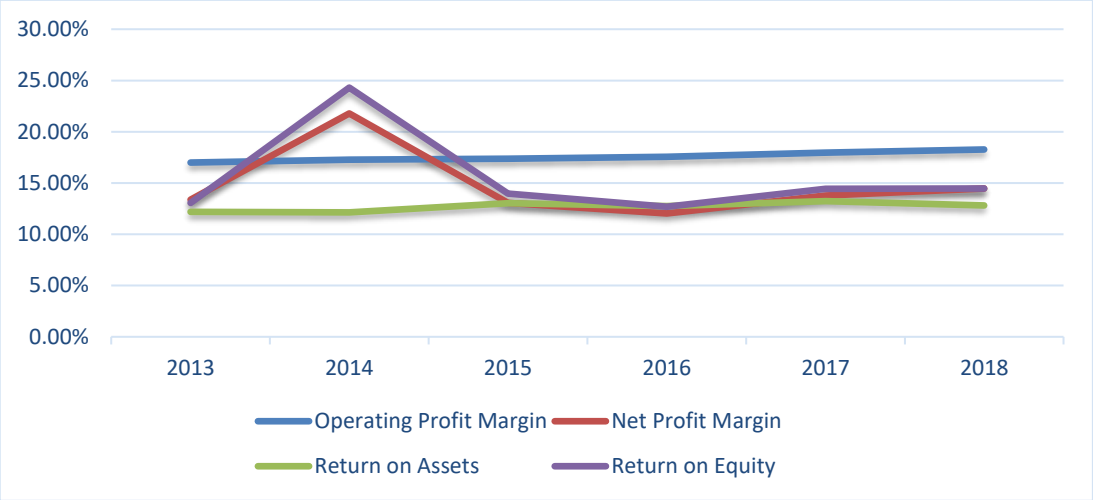
Group.

4.2.1 Profitability Ratios of L'Oréal

In Chapter 2 we described the theoretical knowledge of financial ratios in detail. The profitability ratio shows the enterprise's ability to profit from its operations.

In this part, we use the formula mentioned in Chapter 2 to calculate the results of operating profit margin, net profit margin, and rate of return. The rate of return includes the rate of return on assets and the rate of return on equity. The data comes from the annual report of L'Oréal Group from 2013 to 2018.

Chart 4-3 Trend of profitability ratios of L'Oréal from 2013 to 2018



Source: Own Calculation

Table 4-10 shows L'Oréal Group's profitability ratios, and Chart 4-3 reflects the trend of L'Oréal Group's profitability ratios.

Table 4-10 Profitability ratios of L'Oréal from 2013 to 2018(€ millions)

	Formula	2013	2014	2015	2016	2017	2018
Operating Profit Margin	**(2.5)**	**17.00%**	**17.27%**	**17.37%**	**17.57%**	**17.97%**	**18.27%**
Net Profit Margin	**(2.6)**	**13.39%**	**21.79%**	**13.06%**	**12.03%**	**13.78%**	**14.48%**
Return on Assets	**(2.7)**	**12.18%**	**12.14%**	**13.02%**	**12.74%**	**13.23%**	**12.80%**
Return on Equity	**(2.8)**	**13.07%**	**24.30%**	**13.97%**	**12.69%**	**14.45%**	**14.48%**

Source: Own Calculation

1) Operating Profit Margin

Operating profit margin refers to the ratio of operating profit to operating income and reflects how much profit an enterprise can earn in unit currency sales without considering non-operating costs. The higher the operating profit rate, the more operating profit provided by the sales of goods, the stronger the enterprise's profitability

The L'Oréal Group's operating profit and net sales generally showed an upward trend, and the operating profit margin increased from 17% in 2013 to 18.27% in 2018, the increase was not large. The operating profit margin in the past six years has not exceeded 20%, which indicates that L'Oréal Group has not obtained enough income from normal operations. The lower the operating profit margin, the weaker the profitability of the enterprise. Therefore, the L'Oréal Group needs to innovate continuously to meet customers' purchase needs, and to control costs of goods and reduce operating expenses, thereby increasing revenue.

2) Net Profit Margin

The net profit margin reflects the net profit brought by the unit of currency net sales and represents the profit level of sales revenue. The higher the net profit margin, the higher the enterprise's profitability, which means that after the net sales is converted into net profit, it can generate more funds.

As can be seen from Table 4-10, L'Oréal Group's net profit margin increased from 13.39% in 2013 to 21.79% in 2014, but fell sharply to 13.06% in 2015, because L'Oréal generated a net profit from discontinued operations of €2143 million in 2013. This item was not included in the 2014 income statement, so net profit was reduced from €4908.6 million to €3298.5 million.

Chart.4-3 directly shows the trend of changes in net profit margin. From 2013 to 2018, the net profit margin generally showed an upward trend, from 13.39% to 14.48%. The net profit margin reached its highest peak in 2015, at 21.79%. In short, L'Oréal should focus on product innovation and reduce product costs and expenses, which is conducive to increasing net sales and enhancing the profitability of enterprises.

3) Return on Assets

Return on assets is a kind of profit rate. It compares operating profit and total assets, measures the efficiency of the enterprise's management of using assets to obtain investment returns, and evaluates the enterprise's profitability. The higher rate of return on assets means that the stronger the enterprise's profitability, the more efficiently it can manage its assets, thereby generating greater net profit.

Table 4-10 and Chart.4-3 reflect L'Oréal ’s return on assets from 2013 to 2018. Table 4-10 shows that from 2013 to 2018, operating income increased from €3760.4 million to €4922 million, and total assets increased from €30875 million to €38458 million. L’ Oréal ’s return on assets rose from 12.18% in 2013 to 13.02% in 2015, but it declined from 2015 to 2016. The return on assets from 2016 to 2017 increased from 12.74% to 13.23% because the increase in operating income was higher than total assets.

As can be seen from Chart 4-3, from 2013 to 2018, the return on assets rose from 12.18% to 12.8%, a small increase. The year with the highest return on assets was at 13.23% in 2017. In short, L'Oréal's return on assets has been around 13% for six years, which shows that L'Oréal's ability to obtain net profit through assets is very stable. We know that the return on assets reflects the enterprise's profitability and competitiveness. If L’Oréal Group wants to increase the return on assets, it should focus on increasing asset accumulation and expanding product profit margins, and more on the efficiency of asset management.

4) Return on Equity

The return on equity is the ratio of net profit to equity, which reflects the return on investment from investors and evaluates the profitability of the enterprise’s management. It can measure the enterprise’s ability to profit from shareholders’ investments. Unlike other rates of return, ROE is about the profitability of investors’ investment, based on investors’ investment in the enterprise.

A higher ROE indicates that the enterprise uses capital efficiently. Therefore, the higher the return on equity, the greater the return on investment and the more beneficial to

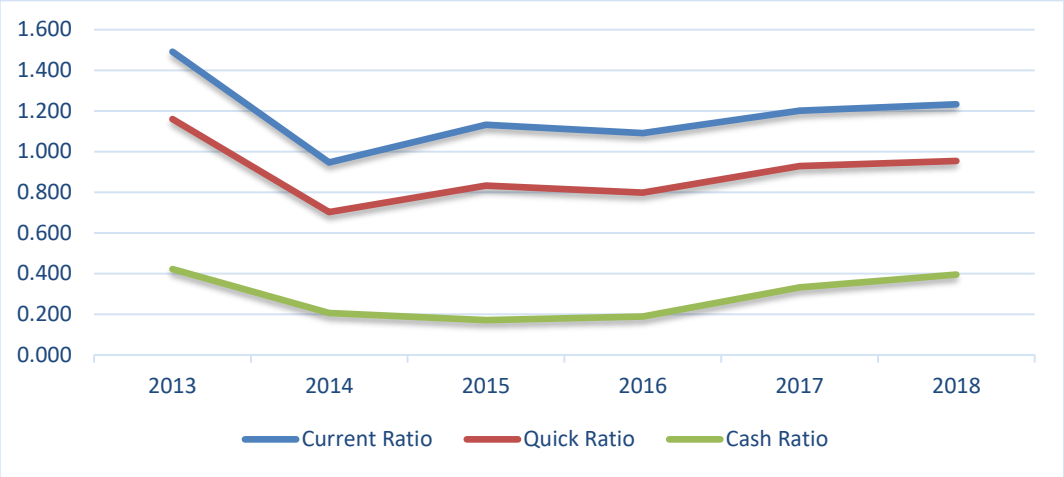
investors.

Table 4-10 shows that from 2013 to 2014, the return on equity increased significantly from 13.07% to 24.30%. From 2014 to 2015, the return on equity fell suddenly by 13.97%. From 2015 to 2016, the return on equity declined slightly, but stabilized at 12.69%. Until 2018, the return on equity gradually increased to 14.48%. The reason for the sharp rise in ROE in 2014 was that L'Oréal Group's operating profit margin increased significantly, reaching 17.3%. Both net profit and net profit per share have increased, and the annual shareholders meeting proposed to increase the dividend by 8%. From 2014 to 2015, net profit fell from € 4908.6 million to € 3298.5 million, and the increase in costs and expenses led to a decline in net profit. Therefore, L'Oréal Group should accelerate market expansion and reduce costs and expenses to achieve net profit growth. Over the years, equity has increased year by year, indicating that L'Oréal is well-funded and continues to attract investment from new shareholders.

4.2.2 Liquidity Ratios of L'Oréal

The liquidity ratio is a financial ratio used to assess the ability of an enterprise to repay short-term debt. The higher the liquidity ratio, the stronger the enterprise's solvency. It is an important indicator to measure a enterprise's ability to convert assets into cash or raise cash. Cash refers to cash or cash equivalents. The liquidity ratio includes current ratio, quick ratio and cash ratio. In this section, we will analyze the liquidity ratio of L'Oréal Group. Chart 4-4 shows the trend of liquidity ratios of L'Oréal from 2013 to 2018.

Chart 4-4 Trend of liquidity ratios of L'Oréal from 2013 to 2018



Source: Own Calculation

Table 4-11 shows L'Oréal Group's liquidity ratios, and Chart 4-4 reflects the trend of L'Oréal Group's liquidity ratios.

Table 4-11 Liquidity ratios of L'Oréal from 2013 to 2018(€ millions)

	Formula	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Current Ratio	**(2.9)**	**1.492**	**0.947**	**1.132**	**1.091**	**1.201**	**1.233**
Quick Ratio	**(2.10)**	**1.160**	**0.703**	**0.834**	**0.798**	**0.929**	**0.954**
Cash Ratio (%)	**(2.11)**	**42.24**	**20.69**	**17.13**	**18.96**	**33.21**	**39.48**

Source: Own Calculation

1) Current Ratio

Firstly, we analyze the current ratio, the current ratio data of L'Oréal Group displayed by Table 4-11. The current ratio, also known as Working Capital Ratio, refers to the ratio of an enterprise's current assets to current liabilities. It represents the level of the enterprise's solvency and helps investors understand the enterprise. The higher the current ratio, the stronger the liquidity of the enterprise's assets and the stronger the short-term solvency. We generally believe that the current ratio should be greater than 200%, indicating that current assets are twice current liabilities, although half of the current assets cannot be realized in the short-term, and the enterprise can repay all current liabilities.

From Table 4-11, we can know that L'Oréal Group's current assets have always exceeded current liabilities for many years, and the current ratio is always greater than 1. Except

that in 2014, current assets were less than current liabilities, the current ratio is 0.947, because L'Oréal Group's current liabilities increased sharply while current assets fell in 2014. Inventories, cash, and cash equivalents are current assets, which can be converted into cash in the short term and used to repay current liabilities. In 2014, L'Oréal 's current liabilities increased due to a substantial increase in current borrowings and debt, which increased from € 255.3 million to € 2521.2 million. The other current assets decreased from € 1500.3 million to € 1199.3 million, resulting in a decrease in current assets. Therefore, the current ratio showed a large decline in 2014.

From 2016 to 2018, the current ratio increased from 1.091 to 1.233. At the same time, current assets increased significantly, and cash and cash equivalents increased significantly, from € 1746 million to € 3992 million. This shows that the enterprise can convert more current assets into cash, but too much cash and cash equivalents are not conducive to balancing risk and return, and L'Oréal should reasonably hold cash.

2) Quick Ratio

The quick ratio is a more stringent indicator for evaluating the enterprise's short-term solvency. In the calculation of the quick ratio, we deduct inventory from current assets because inventory has the lowest liquidity. The quick ratio is generally required to be more than 100%, that is to say, if all current liabilities need to be repaid now, the enterprise can provide enough cash and other quick assets with instant liquidity to repay the debt, and has the ability to pay off all current liabilities at any time. However, if the quick ratio is too high, it means that the quick assets are too much relative to current liabilities, the enterprise holds too much cash, and the enterprise's efficiency in using funds is low.

From Table 4-11, we can understand that the quick rate dropped from 1.16 to 0.703 from 2013 to 2014. The reason is that current liabilities and inventories have increased while current assets have decreased. Over the past two years, current liabilities have risen from € 6295.2 million to 9266.3 million, and current assets have fallen from € 9389.6 million to € 8774.6 million. From 2014 to 2018, the quick ratio showed an overall upward trend, from 0.703 to 0.954, while inventory increased from € 2262.9 million to € 2821.9 million. Increased inventory indicates that the enterprise is expanding its production scale, which has led to increased costs.

3) Cash Ratio

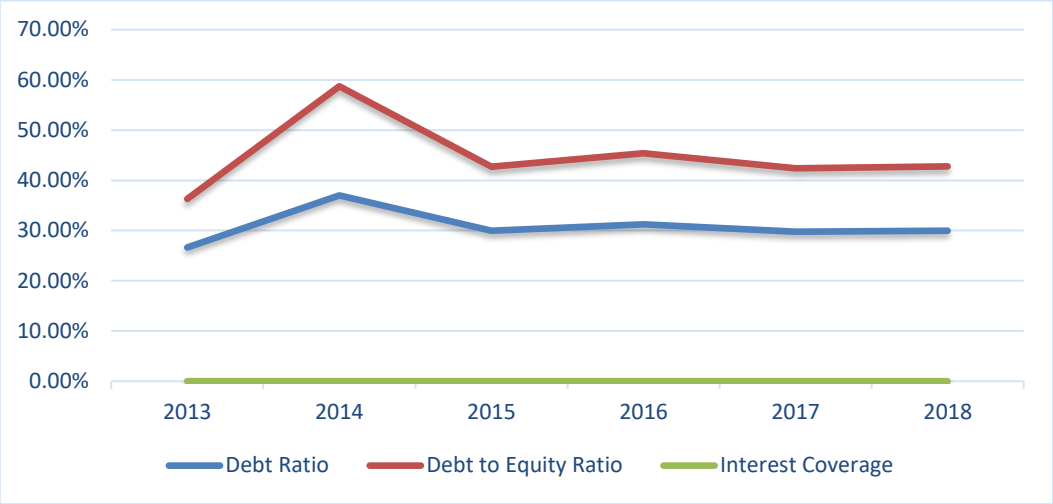
The cash ratio is the ratio of cash and cash equivalents divided by current liabilities. It measures the enterprise's ability to repay short-term debt. The higher the cash ratio, the stronger the enterprise's ability to withstand current liabilities. The cash ratio formula excludes inventory and receivables, and only considers the most liquid cash and cash equivalents in current assets, so it is stricter and more conservative than the current ratio and quick ratio. In addition, this formula does not consider when cash is received and when it is paid.

As can be seen from the Table 4-11, the L'Oréal Group's cash ratio is always lower than 1 from 2013 to 2018, which means that cash and cash equivalents are always lower than current liabilities. In 2014, the cash ratio dropped from 42.24% to 20.69%. There are two reasons for the decline. The first is the increase in current liabilities, which rose from € 6295.2 million to € 9266.3 million. The second is because the number of cash and cash equivalents has fallen, from € 2659.3 million to € 1917 million. The reason is that three items which are net cash (used in) from financing activities, disposal (acquisition) of Treasury stock and issuance (repayment) of short-term loans use a lot of cash. The cash ratios were 17.13% and 18.96% respectively in 2015 and 2016, which means that L'Oréal Group can only repay about 18% of current liabilities using cash and cash equivalents. It rebounded to 39.48% in 2018, but it is still at a relatively low level. We know that the higher the cash ratio, the stronger the enterprise's ability to repay short-term debt. At the same time, the enterprise must consider the cash ratio when applying for a bank loan. Therefore, the L'Oréal Group needs increase the amount of cash and cash equivalents held, help improve operating efficiency and reduce debt repayment pressures and risks.

4.2.3 Solvency Ratios of L’Oréal

In this part we calculate the solvency ratios and analyze the ability of L’Oréal Group to repay long-term liabilities. Solvency ratios include debt ratio, debt to equity ratio and interest coverage ratio. Higher solvency ratios indicate better financial status and credibility. Chart 4-5 shows trend of solvency ratios of L’Oréal from 2013 to 2018.

Chart 4-5 Trend of solvency ratios of L'Oréal from 2013 to 2018



Source: Own Calculation

Table 4-12 shows L'Oréal Group's solvency ratios, and Chart 4-5 reflects the trend of L'Oréal Group's solvency ratios.

Table 4-12 Solvency ratios of L'Oréal from 2013 to 2018 (€ millions)

	Formula	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Debt Ratio	**(2.12)**	**26.64%**	**37.00%**	**29.94%**	**31.23%**	**29.77%**	**29.97%**
Debt to Equity Ratio	**(2.13)**	**36.31%**	**58.73%**	**42.74%**	**45.41%**	**42.39%**	**42.79%**
Interest Coverage	**(2.14)**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**

Source: Own Calculation

1) Debt Ratio

The debt ratio is the ratio of the enterprise's total liabilities to all assets. It is the percentage of total liabilities divided by total assets. It shows the proportion of corporate liabilities in total assets, that is, what proportion of total assets is financed by debt. The debt ratio refers to the relationship between debt and assets, which reflects the enterprise's ability to repay debt principal and interest and can measure the degree to which the enterprise's creditors are protected during liquidation. The lower the debt ratio, the lower the loan risk. If the debt ratio is too high, it is not conducive to the enterprise to raise funds; too low debt ratio is not conducive to the enterprise's innovation. Therefore, the enterprise should balance the relationship between risk and benefit and optimize the capital structure.

In 2014, the debt ratio increased from 26.64% to 37%. The sudden increase was due to

the sudden increase in the provisions for employee retirement obligations and related benefits of the L' Oréal Group, from € 939.6 million to € 1479.7 million. At the same time, current borrowings and debt increased significantly, from € 255.3 million to € 2521.2 million. This led to a sharp increase in total debt in 2014. Overall, the L'Oréal Group's debt ratio increased from 26.64% to 29.97%, which is low risk, that is, low leverage.

2) Debt to Equity Ratio

The debt-equity ratio is often referred to as the financial leverage ratio, which refers to the ratio between the enterprise's total liabilities and the owner's equity (shareholders 'equity), dividing the total debt by the shareholders' equity. The higher the enterprise's debt-equity ratio, the more unstable, high-risk, and high-return the enterprise's financial structure. Conversely, the lower the enterprise's debt-equity ratio, the more stable, low-risk and low-return the enterprise's financial structure. In general, the enterprise's debt-equity ratio is stable below 1, which is conducive to the enterprise's development.

From Table 4-12, it can be concluded that the trend of debt-equity ratio is similar to the trend of debt ratio from 2013 to 2018. But the debt-to-equity ratio is generally higher than the debt ratio, which means that L'Oréal Group's financing depends more on equity, not debt. From 2013 to 2014, the debt-to-equity ratio increased from 36.31% to 58.73%, due to a substantial increase in total liabilities and a decline in equity. The reason for the decline in share capital is that other reserves and other comprehensive income both fell a lot in 2014. Other reserves fell from € 14220.8 million to € 9765.1 million, and other comprehensive income fell from € 4370.1 million to € 3745.9 million. From 2015 to 2018, the debt-equity ratio stabilized at around 42%, and both equity and debt showed a slow upward trend. This ratio indicates that shareholders own more enterprise assets.

3) Interest Coverage

Because L'Oréal Group's annual financial statements lack interest expense items, we cannot calculate interest coverage.

4.2.4 Asset Management Ratios of L'Oréal

The asset management ratio is also known as the activity ratio. An enterprise converts inventory into accounts receivable, and then converts accounts receivable into cash. This

is an operating process. Asset management ratio is a financial ratio used to measure the efficiency and turnover rate of an enterprise's assets, including average collection period, inventory turnover, account receivable turnover and total asset turnover. Some ratios focus on individual assets such as inventory or accounts receivable, while other ratios focus on the overall efficiency of the enterprise. In this part, we mainly analyze four asset management ratios. In order to study the efficiency of L'Oréal Group's use of corporate assets to generate revenue, measure L'Oréal's profitability and operating efficiency.

1) Average Collection Period

The average collection period is the average time required to collect accounts receivable from customers. It reflects the rate of withdrawal of accounts receivable in current assets, that is, the rate at which accounts receivables are realized, and is a supplementary indicator of account receivable turnover. The shorter the average collection period, the stronger the cash ability of the company's accounts receivable. The longer the average collection period, the less likely it is that an enterprise can recover current assets in a timely manner.

The criteria for evaluating this indicator are based on the repayment period of the company's credit sales conditions and the company's credit sales policy. If the actual collection period exceeds the repayment period specified by the company, it means that the operating efficiency of the funds is not high. *（Source: Thomas R. Ittelson）*

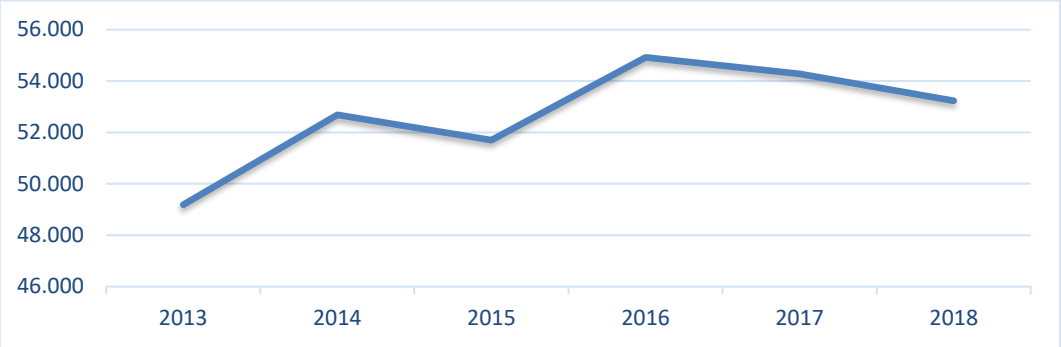
Table 4-13 Average collection period of L'Oréal from 2013 to 2018 (€ millions)

	Formula	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Trade accounts receivable		3022.8	3297.8	3627.7	3941.8	3923.4	3983.2
Net sales		22124	22532	25257	25837	26024	26937
Average Collection Period(days)	**(2.15)**	**49.186**	**52.690**	**51.707**	**54.923**	**54.275**	**53.233**

Source: Own Calculation

From Table 4-13, we can see that the overall trend of the L'Oréal Group's average collection period is increasing from 2013 to 2018, from 49.186 days to 53.233 days, because the accounts receivable and net sales are increasing at the same time.

Chart 4-6 Trend of average collection period of L'Oréal from 2013 to 2018



Source: Own Calculation

From Chart 4-6 we can know that from 2013 to 2014 and from 2015 to 2016, the average collection period has two large increases, with increases of 3.5 days and 3.21 days. In short, the average collection period of L'Oréal Group is stable at around 53 days. This shows that L'Oréal takes an average of 53 days to convert accounts receivable into cash and put it into use.

2) Account Receivable Turnover

The accounts receivable turnover ratio and inventory turnover ratio remained generally stable and declined slightly over the past six years. The inventory turnover ratio fell from 3.145 to 2.758, while the accounts receivable turnover ratio fell from 7.32 to 6.76.

The account receivable turnover is also called the collection ratio. It refers to the number of times that accounts receivables are converted into cash within one year. It is an index to measure the speed of business receivables, which is obtained by dividing sales revenue by average receivables. The more times the company's accounts receivables are converted to cash, the stronger the liquidity and the faster the conversion to cash.

Table 4-14 Account receivable turnover of L'Oréal from 2013 to 2018 (€ millions)

	Formula	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Net sales		22124	22532	25257	25837	26024	26937
Trade accounts receivable		3022.8	3297.8	3627.7	3941.8	3923.4	3983.2
Accounts Receivable Turnover	**(2.16)**	**7.32**	**6.83**	**6.96**	**6.55**	**6.63**	**6.76**

Source: Own Calculation

From Table 4-14, we can know that the overall trend of L'Oréal Group's accounts receivable turnover is declining, with slight fluctuations in the middle. L'Oréal's accounts receivable turnover decreased from 7.32 in 2013 to 6.83 in 2014. It increased from 6.83 in 2014 to 6.96 in 2015. In 2016, it fell to 6.55. In 2013, the turnover of accounts receivable was 7.32, which means that L'Oréal can convert accounts receivable into cash once every 49 days. In 2018, accounts receivable turnover was 6.76, which means that L'Oréal can collect accounts receivable about 7 times this year, with an interval of 53 days to convert accounts receivable into cash. The results of accounts receivable turnover can be compared with the previous average collection period.

3) Inventory Turnover

Inventory turnover ratio is the ratio of cost of sales to average inventory over a period of time. It measures the company's sales efficiency and inventory management level, and it indicates the speed of the company's average inventory turnover in one year, that is, the number of times the average inventory is sold in one year. Increasing the inventory turnover ratio of enterprises can help speed up capital turnover, improve capital utilization and liquidity. The purpose of our analysis of the inventory turnover ratio is to predict the cash flow of the enterprise from a financial perspective, so as to assess the enterprise's demand and supply chain operation level.

Table 4-15 Inventory turnover of L'Oréal from 2013 to 2018 (€ millions)

	Formula	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Inventories		2085.2	2262.9	2440.7	2698.6	2494.6	2821.9
Average Inventory		2028.2	2174.1	2351.8	2569.7	2596.6	2658.3
Cost of sales		-6379	-6501	-7277	-7342	-7359	-7332
Inventory Turnover(days)	**(2.17)**	**3.1454**	**2.9901**	**3.0944**	**2.8571**	**2.8342**	**2.7581**

Source: Own Calculation

From Table 4-15, we can know that L'Oréal's inventory turnover decreased from 3.145 to 2.99 from 2013 to 2014. In 2015, the inventory turnover increased to 3.094. From 2015 to 2018, the inventory turnover continued to decline until 2.758. The inventory turnover in 2013 is approximately equal to 3 times, which is the maximum in the past six years. This is equivalent to L'Oréal using an average of €2028.2 million turnovers 3 times within a year and earning profit of 3 times. The inventory turnover in 2018 is

approximately equal to 2.7 times, which is the minimum in the past six years. It said that L'Oréal used an average of € 2658.3 million to run 2.7 times within a year and earned a profit of 2.7 times, meaning that it took an average of 133 days to sell out inventory.

4) Total Assets Turnover

The total asset turnover refers to the ratio of an enterprise's net sales (revenues) to total assets within a certain period. The total asset turnover is an important indicator for evaluating the operation and utilization efficiency of all assets of an enterprise. It reflects the operational capability of an enterprise's assets and measures the efficiency of the enterprise's use of assets to generate revenue. The higher the total asset turnover, the faster the total asset turnover, the higher the efficiency of using assets, and the stronger the company's operating ability.

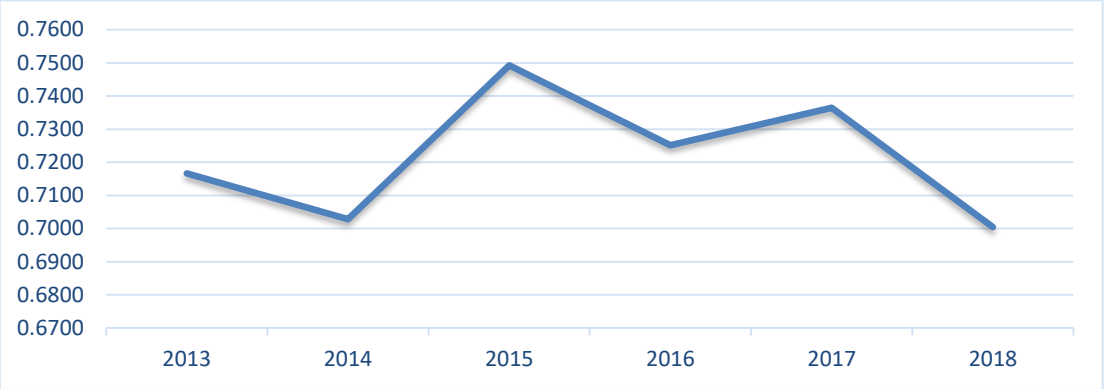
Table 4-16 Total assets turnover of L'Oréal from 2013 to 2018 (€ millions)

	Formula.	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Net sales		22124	22532	25257	25837	26024	26937
Total Assets		30875	32059	33711	35630	35339	38458
Total Assets Turnover	**(2.18)**	**0.7166**	**0.7028**	**0.7492**	**0.7251**	**0.7364**	**0.7004**

Source: Own Calculation

From Table 4-16 and Chart 4-7 we can conclude that the total asset turnover of L'Oréal Group has stabilized at around 0.7 for six years. If the total asset turnover is equal to 1, it means that the net sales is equal to the total assets, which means that the company operating 1 unit of assets can generate 1 euro of net sales. In 2015, the total asset turnover was 0.7492, which is the maximum of the total asset turnover in recent years, which means that L'Oréal can earn revenue of 0.7492 euros from operating 1 unit of assets. The 0.7004 in 2018 is the lowest point of L'Oréal's total asset turnover in six years, due to the increase in total assets and the problem of inventory liquidity.

Chart 4-7 Trend of total assets turnover of L'Oréal from 2013 to 2018



Source: Own Calculation

In short, L'Oréal Group's total asset turnover has been kept below 1, which means that each unit of assets can only generate less than 1 income. Therefore, L'Oréal can accelerate the turnover of assets through the method of small profits but quick turnover, thereby increasing profits. It can also look for specific problems in inventory management in the management process, while ensuring the continuity of production and operation, and improving the efficiency of the use of funds, thereby improving the level of enterprise management.

4.3 Pyramidal Decompositions of L'Oréal

In this part, we will use pyramid decomposition to analyze the profitability of L'Oréal Group. We decompose the ROE ratio into three parts which are net profit margin, total asset turnover and financial leverage, to analyze and compare L'Oréal's operating performance, which helps corporate management to see the determinants of equity capital return more clearly. In the influence quantification part, we will use logarithmic decomposition method to complete the calculation. We use formulas (2.19) and (2.23) for specific analysis. According to formula (2.19), we need some data from Table 4-17 to calculate the three component ratios.

Table 4-17 Data for DuPont analysis of L'Oréal from 2013 to 2018 (€ millions)

year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
EAT	2961.4	4908.6	3298.5	3108.7	3585.5	3899.5
EBT	3928	3890.4	4517.4	4323.4	4727	5183.7
EBIT	3760.4	3890.7	4387.7	4539.9	4676.3	4922
Rev	22124.2	22532	25257.4	25837.1	26023.7	26937.4

A	30874.7	32058.8	33711.3	35630.2	35339.1	38457.5
E	22651	20196.9	23617	24504	24818.5	26933.6

Source: Annual report of L'Oréal

Firstly, we should calculate the absolute change and index of change of ROE. From Table 4-18, we will see that the absolute change and index of the change of ROE reached the maximum in the past six years in 2014. After 2015, the absolute change declined sharply, and the index of the change stabilized at around 1 in the later period, which indicates that the ROE ratio is becoming more and more stable.

Table 4-18 First step for method of logarithmic decomposition method

year	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
ROE	13.07%	24.30%	13.97%	12.69%	14.45%	14.48%
Absolute change	-	11.23%	-10.34%	-1.28%	1.76%	0.03%
Index of the change	-	1.859	0.575	0.908	1.139	1.002

Source: Own calculation

Then, we find the factors that have the greatest impact on the ROE ratio according to the formula (2,23) and order the ratios according to their impact on the basic ratio.

Table 4-19 Logarithmic decomposition of ROE for L'Oréal between 2013 and 2014

	a_0	a_1	I_a	Δx_{ai}	Order
a1=EAT/Rev	0.134	0.218	1.628	0.088	3
a2=Rev/Asset	0.717	0.703	0.981	-0.004	1
a3=Asset/Equity	1.363	1.587	1.165	0.028	2
Sum	-	-	-	0.112	

Source: Own calculation

$$\Delta ROE_1 = \frac{\ln 1.628}{\ln 1.859} \cdot 11.23\% = 0.088$$

$$\Delta ROE_2 = \frac{\ln 0.981}{\ln 1.859} \cdot 11.23\% = -0.004$$

$$\Delta ROE_3 = \frac{\ln 1.165}{\ln 1.859} \cdot 11.23\% = 0.028$$

From Table 4-19 we can see that the sum of the logarithmic decomposition is equal to the absolute change of ROE which is 0.112 from 2013 to 2014

Table 4-20 Logarithmic decomposition of ROE for L'Oréal between 2014 and 2015

	a_0	a_1	I_a	Δx_{ai}	Order
a1=EAT/Rev	0.218	0.131	0.599	-0.095	1
a2=Rev/Asset	0.703	0.749	1.066	0.012	3
a3=Asset/Equity	1.587	1.427	0.899	-0.020	2
Sum	-	-	-	-0.103	-

Source: Own calculation

$$\Delta ROE_1 = \frac{\ln 0.599}{\ln 0.575} \cdot -10.34\% = -0.095$$

$$\Delta ROE_2 = \frac{\ln 1.066}{\ln 0.575} \cdot -10.34\% = 0.012$$

$$\Delta ROE_3 = \frac{\ln 0.899}{\ln 0.575} \cdot -10.34\% = -0.02$$

From Table 4-20 we can see that the sum of the logarithmic decomposition is equal to the absolute change of ROE which is -0.103 from 2014 to 2015.

Table 4-21 Logarithmic decomposition of ROE for L'Oréal between 2015 and 2016

	a_0	a_1	I_a	Δx_{ai}	Order
a1=EAT/Rev	0.131	0.120	0.921	-0.011	1
a2=Rev/Asset	0.749	0.725	0.968	-0.004	2
a3=Asset/Equity	1.427	1.454	1.019	0.002	3
Sum	-	-	-	-0.013	-

Source: Own calculation

$$\Delta ROE_1 = \frac{\ln 0.921}{\ln 0.908} \cdot -1.28\% = -0.011$$

$$\Delta ROE_2 = \frac{\ln 0.968}{\ln 0.908} \cdot -1.28\% = -0.004$$

$$\Delta ROE_3 = \frac{\ln 1.019}{\ln 0.908} \cdot -1.28\% = 0.002$$

From Table 4-21 we can see that the sum of the logarithmic decomposition is equal to the absolute change of ROE which is -0.013 from 2015 to 2016.

Table 4-22 Logarithmic decomposition of ROE for L'Oréal between 2016 and 2017

	a_0	a_1	I_a	Δx_{ai}	Order
a1=EAT/Rev	0.120	0.138	1.145	0.018	3
a2=Rev/Asset	0.725	0.736	1.016	0.002	2
a3=Asset/Equity	1.454	1.424	0.979	-0.003	1
Sum	-	-	-	0.018	-

Source: Own calculation

$$\Delta ROE_1 = \frac{\ln 1.145}{\ln 1.139} \cdot 1.76\% = 0.018$$

$$\Delta ROE_2 = \frac{\ln 1.016}{\ln 1.139} \cdot 1.76\% = 0.002$$

$$\Delta ROE_3 = \frac{\ln 0.979}{\ln 1.139} \cdot 1.76\% = -0.003$$

From Table 4-22 we can see that the sum of the logarithmic decomposition is equal to the absolute change of ROE which is 0.018 from 2016 to 2017.

Table 4-23 Logarithmic decomposition of ROE for L'Oréal between 2017 and 2018

	a_0	a_1	I_a	Δx_{ai}	Order
a1=EAT/Rev	0.138	0.145	1.051	0.0071	3
a2=Rev/Asset	0.736	0.700	0.951	-0.0072	1
a3=Asset/Equity	1.424	1.428	1.003	0.0004	2
Sum	-	-	-	0.0003	-

Source: Own calculation

$$\Delta ROE_1 = \frac{\ln 1.051}{\ln 1.002} \cdot 0.031\% = 0.0071$$

$$\Delta ROE_2 = \frac{\ln 0.951}{\ln 1.002} \cdot 0.031\% = -0.0072$$

$$\Delta ROE_3 = \frac{\ln 1.003}{\ln 1.002} \cdot 0.031\% = 0.0004$$

From Table 4-23 we can see that the sum of the logarithmic decomposition is equal to the absolute change of ROE which is 0.0003 from 2017 to 2018.

We calculated the logarithmic decomposition results of each component ratio from 2013 to 2018, and we can conclude that the sum of the logarithmic decomposition results of the basic ratio is equal to the absolute change of ROE.

From Table 4-19, we can see the results of L'Oréal Group's ROE from 2013 to 2014, mainly affected by the total asset turnover of -0.004, followed by financial leverage of 0.028, and net profit margin of 0.088. The total asset turnover is negative, which means that its increase will reduce the ROE. Financial leverage and net profit margin are positive, which means that its increase will lead to an increase in ROE. In short, the absolute change in ROE from 2013 to 2014 is a positive number, which is 0.112.

From Table 4-20, we can see the results of L'Oréal Group's ROE from 2014 to 2015,

mainly affected by the net profit margin of -0.095, followed by the financial leverage of -0.020, and finally the total asset turnover rate of 0.012. Net profit margin and financial leverage have a greater impact than total asset turnover. Therefore, the absolute change in ROE from 2014 to 2015 is still negative, which is -0.103, which means that the return on equity in the second year is falling.

From Table 4-21, we can know the results of L'Oréal Group's ROE from 2015 to 2016. The main impact is the net profit margin -0.011, followed by the total asset turnover of -0.004, and finally the financial leverage of 0.002. Although the financial leverage is positive, the net profit margin and total asset turnover are greater than financial leverage. Therefore, the absolute change in ROE is still negative, at -0.013 from 2015 to 2016. This shows that the group's return on equity is still declining, which is not good for the shareholders of the group.

From Table 4-22, we can know the results of L'Oréal Group's ROE from 2016 to 2017. The main impact is financial leverage of -0.003, followed by total asset turnover of 0.002, and net profit margin of 0.018. We can see that both total asset turnover and net profit margin are positive, and the combined effect of the two is greater than financial leverage. Therefore, the absolute change in ROE is positive between 2016 and 2017, which is 0.018. This shows that the company's return on equity has started to rise, and L'Oréal Group has begun to adjust its operating structure in order to narrow the gap in return on equity.

From Table 4-23, we can see the results of L'Oréal Group's ROE from 2017 to 2018, mainly affected by its total asset turnover -0.0072, followed by financial leverage of 0.0004, and net profit margin of 0.0071. The total asset turnover is negative, and when it increases, ROE decreases. However, the financial leverage and net profit margin are positive, and their influence is greater than the total asset turnover. Therefore, the absolute change in ROE from 2017 to 2018 is positive, 0.0003, and the increase is very small, which means that L'Oréal's return on equity in the second year has not changed much.

We know that, compare with the commonly used gradual change method, the calculation result of the logarithmic decomposition method will be the same. The difference is that logarithmic decomposition cannot use negative data to analyze, so it is very important to choose the correct analysis method.

5. Conclusion

Financial analysis is an important part of corporate financial management, which is helpful to assess the financial performance of the enterprise, find financial loopholes, and provide suggestions for the future development of the enterprise to ensure the good financial status of the enterprise.

The aim of bachelor thesis was to evaluate the financial situation of L'Oréal Group through different financial analysis methods and understand the status and development prospects of L'Oréal Group.

Chapter two introduced the theoretical knowledge of financial analysis, including two financial statements, common-size analysis, financial ratio analysis and pyramidal decomposition. Chapter three introduced the history, structure, main products, and core development strategy of L'Oréal Group. Chapter four specifically analyzed the financial situation of L'Oréal Group from 2013 to 2018, including profitability, solvency, liquidity and asset management capabilities. The theoretical basis is the methods and formulas in Chapter two and the data comes from the annual report over the years. At the same time, this part introduced the pyramid decomposition, which decomposes ROE into three basic financial ratios, and analyzes which ratio has the greatest impact on the enterprise through influence quantification analysis.

Firstly, through common-size analysis, we can know that L'Oréal's total cost and total revenue have increased over the past six years. In 2015, the company discontinued operations generated a large amount of net profit, resulting in a sudden increase in net profit. However, normal operations resumed after 2015, and net income continued to increase.

Secondly, from the financial ratio analysis, we can understand that the profitability of the L'Oréal Group in the past six years has been on the rise, for example, operating profit margin rose from 17% to 18.27%. In terms of solvency, L'Oréal Group's sources of funds rely more on equity rather than debt.

Finally, the ROE after the pyramid decomposition rose from 13.07% to 14.48% in six

years. The total asset turnover from 2013 to 2014 has the greatest impact, and the net profit margin from 2014 to 2016 has the largest impact on ROE. From 2016 to 2017 financial leverage has the greatest impact on ROE, and the total asset turnover from 2017 to 2018 has the greatest impact on ROE. This means that L'Oréal Group's return on equity is not high.

In short, through common-size analysis, financial ratio analysis and pyramid decomposition, this thesis analyzes the financial statements of L'Oréal Group and understands that in the past six years, the financial status of L'Oréal Group has been relatively stable and is developing well. I think that after strengthening the connection between marketing and digitalization, L'Oréal Group can expand the market and sell more products.

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List of Abbreviations

A – Asset

ACP – Average collection period

ART – Account receivable turnover

EAT – Earning after taxes

EBIT – Earning before interests and taxes

EBT – Earning before taxes

IT – Inventory turnover

NPM – Net profit margin

OP – Operating profit

R – Revenues

ROA – Return on assets

ROE – Return on equity

TAT – Total assets turnover

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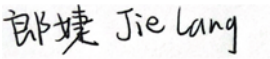

Jie Lang

List of Annexes

Annex 1: The balance sheet of L’Oréal Group
Annex 2: The income statement of L’Oréal Group

Annex 1

Balance Sheets from 2013 to 2018 of LOREAL						
Assets						
€ millions	2013	2014	2015	2016	2017	2018
Non-current assets	**21485.1**	**23284.2**	**24457.6**	**25584.6**	**24320.1**	**25991.2**
Goodwill	6206	7525.5	8151.5	8792.5	8872.3	9597.1
Other intangible assets	2105.4	2714.6	2942.9	3179.4	2579.1	3087.3
Property, plant and equipment	2891.2	3141.1	3403.5	3756.9	3571.1	3624.6
Non-current financial assets	9204	9069	9410.9	9306.5	8766.2	9100.5
Investments in associates	-435.2		1	1	1.1	9
Deferred tax assets	643.3	834	547.9	548.3	530.3	572.7
Current assets	**9389.6**	**8774.6**	**9253.7**	**10045.6**	**11019**	**12466.3**
Current assets excluding assets held for sale	**9389.6**	**8774.6**	**9253.7**	**10045.6**	**11019**	**12466.3**
Inventories	2085.2	2262.9	2440.7	2698.6	2494.6	2821.9
Trade accounts receivable	3022.8	3297.8	3627.7	3941.8	3923.4	3983.2
Other current assets	1500.3	1199.3	1486.9	1420.4	1393.8	1509.1
Current tax assets	122.1	97.6	298.6	238.8	160.6	160.1
Cash and cash equivalents	**2659.3**	**1917**	**1399.8**	**1746**	**3046.6**	**3992**
Assets held for sale						
Total	**30874.7**	**32058.8**	**33711.3**	**35630.2**	**35339.1**	**38457.5**
Equity & liabilities						
Equity	**22651**	**20196.9**	**23617**	**24504**	**24818.5**	**26933.6**
Share capital	121.2	112.3	112.6	112.4	112.1	112.1
Additional paid-in capital	2101.2	2316.8	2654.4	2817.3	2935.3	3070.3
Other reserves	14229	9773.3	12873.4	13951.6	14752.2	15952.5
Other comprehensive income	4370.1	3745.9	4517.5	4237.6	3904.7	4242.1
Cumulative translation adjustments	-566.4	17.8	391.9	410.9	-413.5	-287.4
Treasury stock	-568.1	-683	-233.3	-133.6	-56.5	-56.5
Net profit attributable to owners of the company	2958.2	4910.2	3297.4	3105.8	3581.4	3895.4
Equity attributable to owners of the company	**22645.2**	**20193.3**	**23613.9**	**24501.9**	**24815.7**	**26928.4**
Non-controlling interests	5.8	3.6	3.1	2.1	2.8	5.2

Non-current liabilities	**1928.6**	**2595.6**	**1920.6**	**1918.9**	**1347.2**	**1412.2**
Provisions for employee retirement obligations and related benefits	939.6	1479.7	807.2	711.8	301.9	388.9
Provisions for liabilities and charges	174.5	193.6	195.9	333.3	434.9	336.1
Deferred tax liabilities	730.6	855.2	876.8	842.9	597	673.7
Non-current borrowings and debt	83.9	67.1	40.8	30.9	13.4	13.5
Current liabilities	**6295.2**	**9266.3**	**8173.7**	**9207.3**	**9173.4**	**10111.6**
Trade accounts payable	3249.7	3452.8	3929	4135.3	4140.8	4550
Provisions for liabilities and charges	528.8	722	754.6	810.7	889.2	979.8
Other current liabilities	2083.1	2403.2	2597.3	2854.4	2823.9	3138.9
Income tax	178.3	167.1	151.9	173.2	158.5	215.1
Current borrowings and debt	255.3	2521.2	741	1233.7	1161	1227.8
Total liabilities	**8223.8**	**11861.9**	**10094.3**	**11126.2**	**10520.6**	**11523.8**
Total	**30874.7**	**32058.8**	**33711.3**	**35630.2**	**35339.1**	**38457.5**

Annex 2

Income Statements from 2013 to 2018 of LOREAL						
€ millions	*2013*	*2014*	*2015*	*2016*	*2017*	*2018*
Net sales	**22124**	**22532**	**25257**	**25837.1**	**26023.7**	**26937.4**
Cost of sales	-6379	-6501	-7277	-7341.7	-7359.2	-7331.6
Gross profit	**15745**	**16031**	**17980**	**18495.4**	**18664.5**	**19605.8**
Research and development	-748.3	-760.6	-794.1	-849.8	-877.1	-914.4
Advertising and promotion	-6622	-6559	-7360	-7,498.7	-7650.6	-8144.7
Selling, general and administrative expenses	-4614	-4821	-5439	-5607	-5460.5	-5624.7
Operating profit	**3760**	**3891**	**4387.7**	**4539.9**	**4676.3**	**4922**
Other income and expenses	-128.6	-307.2	-193.4	-543.8	-276.3	-94.7
Operational profit	**3632**	**3584**	**4194.3**	**3996.1**	**4400**	**4827.3**
Finance costs on gross debt	-23.1	-31.4	-23.7	-32.6	-35.5	-34.8
Finance income on cash and cash equivalents	36.4	42.3	55.6	39.1	38.5	47.9
Finance costs, net	**13.3**	**11**	**31.9**	**6.5**	**3.1**	**13.1**
Other financial income (expenses)	-44.7	-35.1	-45.7	-25.8	-26	-15
Sanofi dividends	327.5	331	336.9	346.5	350	358.3
Profit before tax and associates	**3928**	**3890**	**4517.4**	**4323.4**	**4727**	**5183.7**
Income tax	-1044	-1111	-1223	-1214.6	-901.3	-1284.3
Share of profit in associates	-3	-13.5	4	-0.1	-0.1	0.1
Net profit from continuing operations	**2881**	**2766**	**3298.5**	**3108.7**	**3825.6**	**3899.5**
Net profit from discontinued operations	**80**	**-2143**			**-240.1**	
Net profit	**2961**	**4909**	**3298.5**	**3108.7**	**3585.5**	**3899.5**
Attributable to:						
• owners of the company	2958.2	4910.2	3297.4	3105.8	3581.4	3895.4
• non-controlling interests	3.2	-1.6	1.1	2.9	4.1	4.1
Earnings per share attributable to owners of the company (euros)	4.95	8.51	5.92	5.55	6.4	6.96
Diluted earnings per share attributable to owners of the company (euros)	4.87	8.39	5.84	5.5	6.36	6.92
Earnings per share of continuing operations attributable	4.82	4.79	5.92	5.55	6.83	6.96

to owners of the company (euros)						
Diluted earnings per share of continuing operations attributable to owners of the company (euros)	4.73	4.73	5.84	5.5	6.78	6.92
Earnings per share of continuing operations attributable to owners of the company, excluding non-recurring items (euros)	5.07	5.41	6.26	6.52	6.7	7.13
Diluted earnings per share of continuing operations attributable to owners of the company, excluding non-recurring items (euros)	4.9	5.34	6.18	6.46	6.65	7.08